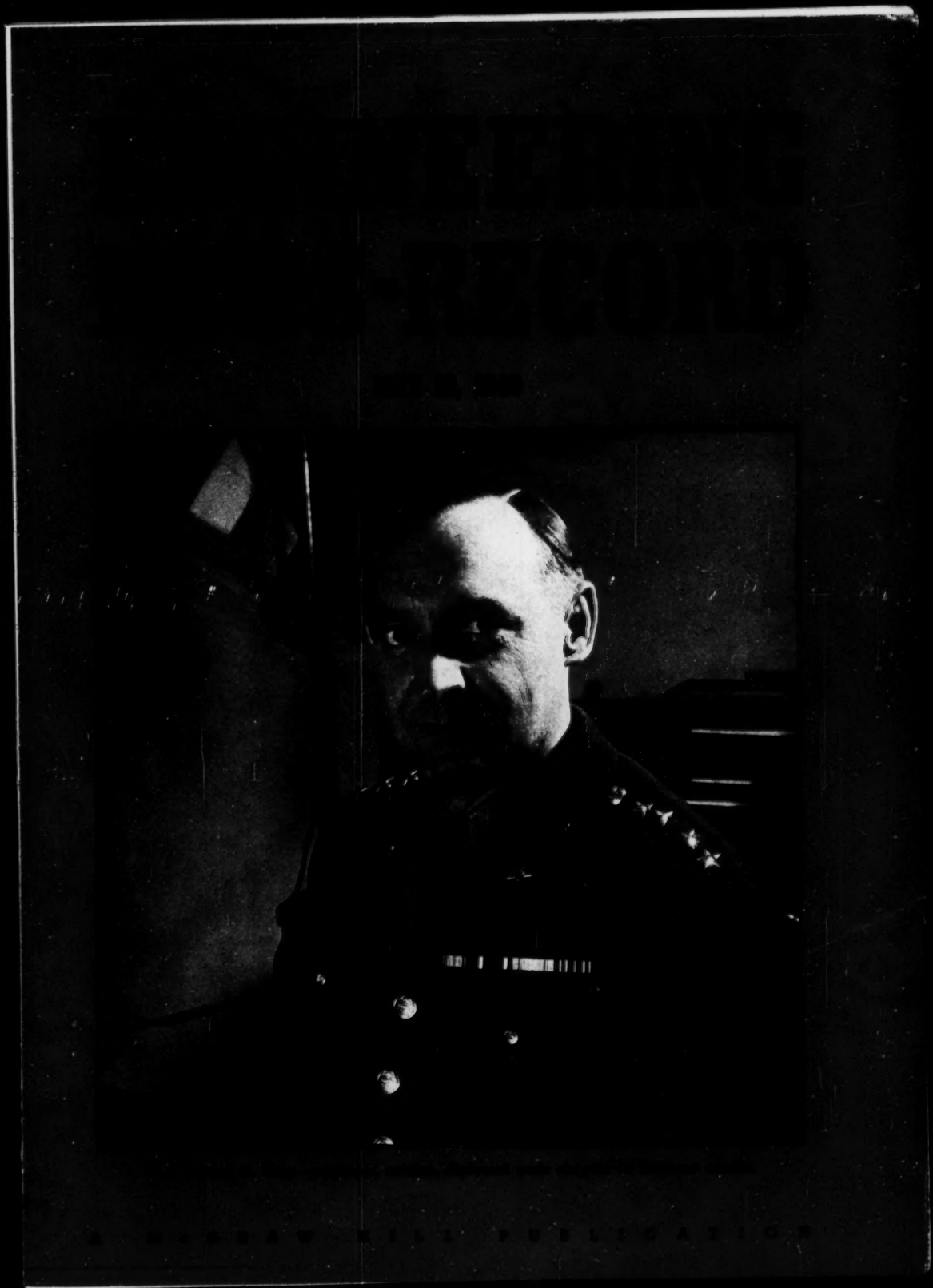
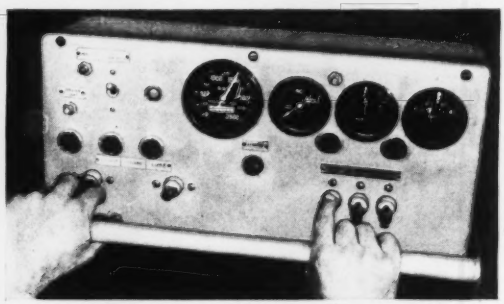


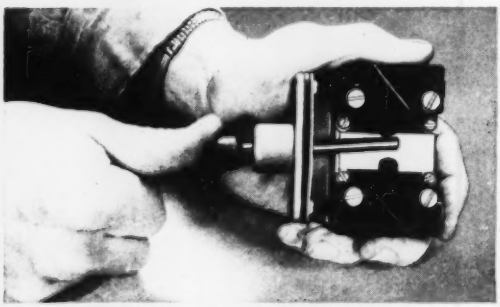
maneuvering a monster...

Electrically

New LeTourneau Scraper Moves 16-ton Loads at Touch of a Button



Control panel of LeTourneau's Model "C" Tournapull; a fingertip movement instantly applies power to motors which steer the vehicle, operate hoist, apron or tailgate.



Two General Electric switchettes make up switch assembly on control panel, above. Other G-E switches limit travel on steer, hoist, apron and tailgate motions by cutting power at the proper instant, eliminating stresses and strains.

The trend toward electrification of construction equipment has even invaded the mobile-tool market; witness the giant earth mover with electric power-steer and electrically operated hoist, apron and tailgate. Contractors using this new tool will move more yards per day at lower cost per yard because the electric drive offers fast, accurate, effortless control. This means instant response, quick reversal, increased operator comfort and efficiency. Gone are the multiple, clumsy manual controls and many mechanical linkages which slowed operations and increased maintenance costs.

Ask him Today!

Electric drive, which offers the maximum in reliability with minimum maintenance, helps contractors build more for less . . . faster. Whether you build or use construction tools, ask your General Electric representative to tell you about the inherent advantages of electric drive. ***Apparatus Department, General Electric Company, Schenectady, N. Y.***

Electrified Construction
BETTER PRODUCT
LOWER COST

GENERAL ELECTRIC

6B4-5

Bethlehem Reinforcing Bars in bridge deck. Nearly 45 tons of reinforcing steel were used in this structure.

Straightening Out U.S. 220

Over she goes! Two men move Bethlehem Bar Mat into place over initial course.

Inserting installing-cap over Bethlehem Dowel Unit. In finished lane this unit will function as contraction joint.

Completed bridge ready for traffic. Bethlehem Cable Guard Rail, mounted on steel posts at bridge approaches, provides constant protection for motorists.

An after-lunch chat. Left to right: Al Diehl and Joseph Schuessler, inspectors, both of Pennsylvania Department of Highways; Robert Rosser, contractor; and Emory Grove, foreman.

One of the many road-modernization projects undertaken in recent months by the Pennsylvania Department of Highways was a 4427-ft stretch of U. S. 220, located in the Cessna, Pa., area. The two-lane job included a bridge, and was handled by Rosser Construction Co., of Mt. Joy, Pa. Bridge reinforcing, bar mats, dowel units and cable guard rail were supplied by Bethlehem. Various phases of the construction are shown in the accompanying pictures.

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Guard Rail Posts • Wire Rope and Strand • Pipe
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Timber Bridge Hardware • Tie-Rods
Sheet- and H-Piling • Fabricated Structural Steel

BETHLEHEM STEEL

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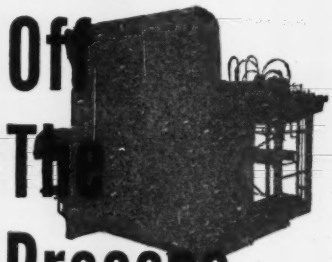

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ENGINEERING NEWS-RECORD

VOLUME 142 MAY 19, 1949 NO. 20

WALDO G. BOWMAN
Editor

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THE COVER PICTURE

When he returns to the United States shortly and doffs his uniform, General Lucius DuBignon Clay will have put a period to a very great career as a soldier, engineer, administrator, and diplomat-in-uniform. He will carry with him the respect and admiration of every American, not excluding those who urged civilian instead of military administration in Germany.

Almost too typically an engineer, Clay's ice-cold surface manner, capacity for details and clear logic cover a fiery temperament and a steel-hard determination that made him the personification of the U. S. military government abroad.

A 1918 West Point graduate, Gen. Clay served for more than 20 years with various offices of the Corps of Engineers. He was called to Washington to the very important post of deputy chief of the Army Service Forces. Later he became Normandy Base Commander, ETO, and after the war replaced General Eisenhower as chief of U. S. forces and military governor.

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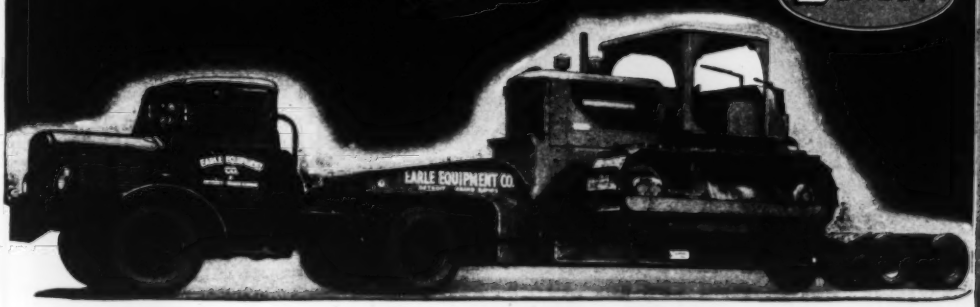
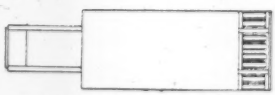
GREATER EFFICIENCY AND ECONOMY THE DORSEY



Select the DORSEY Low Bed Machinery Trailer with Confidence!



Model M 15-20-25 Tons

Model MT 35-40-50-60-75 Tons

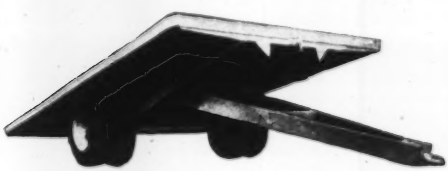
Model MK 10-15 Tons

Contractors and Engineers throughout the nation are selecting the Dorsey Low Bed Heavy Duty Semi or Full Trailers to move heavy equipment . . . to "Make the Heavy Jobs Light."

Dorsey Low Beds are available in four models — M — MK — MTS and MT — with capacities from 10 T to 75 T — a model for every need and state law load limit.

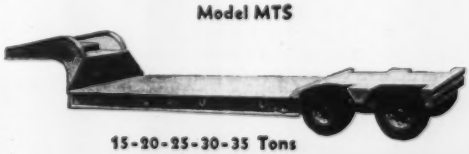
"Engineered for minimum weight . . . safe road performance . . . new low platform height . . . new hydraulic, air or vacuum brakes, all are features of advanced design that insure *low, dependable, operating economy.*"

DORSEY TILT-TO-LOAD TRAILERS



A-7 7,500 lb. A-15 15,000 lb. A-20 20,000 lb.

Model MTS

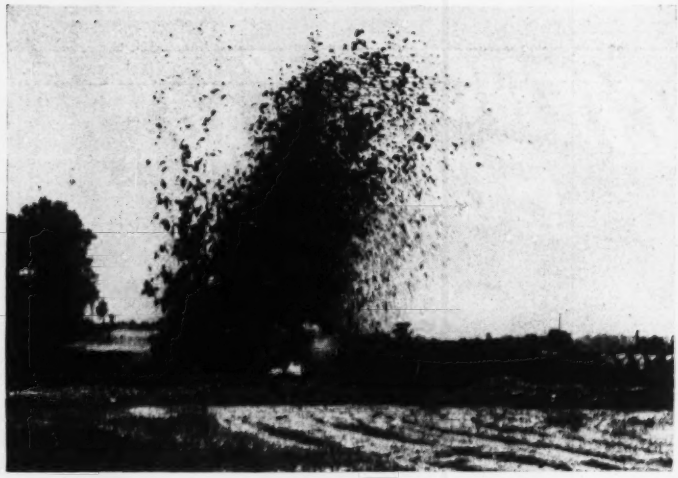


15-20-25-30-35 Tons

DORSEY TRAILERS

MODERN DESIGNED TRANSPORTATION

ELBA ALABAMA, U. S. A.



RECORD FILL SETTLEMENT MADE WITH DU PONT 40% SPECIAL GELATIN

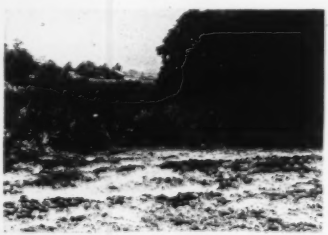
Toe-shooting method used at Sparrows Pt., Md., to settle fill 447 feet wide for Pennsylvania R.R.

A marshalling yard had to be built over a swamp. The depth of the unstable muck was as much as 27 feet, and the area to be filled 447′ wide by 1,200′ long. The problem was—how to settle this record width of fill—quickly and compactly—all the way down.

This was readily accomplished by the toe-shooting method of fill settlement, using Du Pont 40% Special Gelatin to displace the muck and drop the slag fill down to stable bottom. The extreme width of this fill necessitated firing relatively large shots with four rows of holes, so Du Pont "MS" Delay Electric Blasting Caps were used to keep vibration at a minimum, a new idea in fill settlement work.

This combination settled the slag fill quickly and completely—allowed the contractor to make rapid progress with one of the largest fill settlement jobs done up to now.

Whether your blasting problems are unusual or run-of-mine—see your Du Pont Explosives Representative for suggestions on how to do the job easier, safer, more economically.



Mud wave pushed out by settlement of fill

E. I. DU PONT DE NEMOURS & CO. (INC.)
EXPLOSIVES DEPARTMENT,
WILMINGTON 98, DELAWARE

Contractors & Engineers Endorse these Du Pont Blasting Products

DU PONT SPECIAL GELATIN

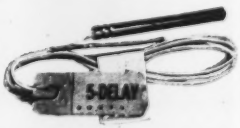
A water-resistant dynamite of high velocity. Plastic and cohesive. Excellent fumes.

DU PONT "GELEX"*

An economical, semi-gelatinous dynamite sufficiently water-resistant to meet most requirements.

DU PONT "SERIES B" DELAY ELECTRIC BLASTING CAPS

. . . a recent addition to the extensive line of Du Pont Caps, designed to eliminate risk of misfires due to arcing or "water hammer."



DU PONT "MS" (*millisecond*) DELAY ELECTRIC BLASTING CAPS

. . . reduce vibration . . . improve fragmentation . . . eliminate dynamite in muck. Come in nine delay periods with intervals clearly marked on tag.

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BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

DU PONT EXPLOSIVES

BLASTING SUPPLIES AND ACCESSORIES

THE CONSTRUCTION WEEK

PRESIDENCY BOGGING DOWN?—Surveying the current Congressional scene—both houses jampacked with thousands of measures introduced, but approving very few—Washington observers last week concluded that the Presidency has lost direction and leadership and is bogging down badly. Examples:

Labor—Truman will get a new law, but it won't be the Taft-Hartley repeal he's been holding out for so stubbornly; his own forces led the strategic retreat two weeks ago, rather than compromise with Taft and his Republicans.

Business Regulation—All the January proposals have been dropped or put aside, what with a sliding off of business—and there is nobody pushing them.

Minimum Wage—A boost to 75 cents could have gone through easily in January. But Truman wanted more workers covered, and the resulting squabbles snagged the bill. Now he'll settle for 60-65 cents—if he gets anything.

Spending and Taxes—The President's programs are virtually friendless. Congress is tinkering with a budget cut, rather than face up to more taxes or deficit financing.

Industrial Mobilization—Drafts of various segments of an industrial mobilization plan are nearly completed, but there is nobody to push it through. Last year's draft of reserve legislation for an emergency has never gone to Congress.

STRAIGHT TIME ON SATURDAYS—Labor unions and the Constructors Association of Western Pennsylvania have approved a procedure that will permit payment of straight time wages on Saturdays—when bad weather has prevented 40 hours' work in the first five days of the week. Two hedges are included in the agreement: Pittsburgh work is excluded; and, if the proposition comes up on any job, all unions must approve the straight time. If any union turns it down, then everybody gets overtime for Saturday.

APPRENTICE SUPPLY—There are now more than 233,000 apprentices in training for the construction trades, the Department of Labor reports—the biggest proportion of them in the carpentry, plumbing and electrical fields. Not surprisingly, California and New York rank highest, in that order, in number of apprentices employed.

NEW ENGLAND PLAN SNAGS—A broad program for a New England Authority—a six state body that would not only develop rivers, but also power, education, public buildings, stream cleanup (ENR April 7, p. 5)—hit a snag last week when the Vermont legislature killed a proposal for Vermont's participation. Vermonters felt the plan would have little value to them. Massachusetts, Rhode Island, Connecticut and New Hampshire have already approved the plan, Maine has still to act on it.

MISSOURI BRIDGE—Northern Pacific Railroad officials have verified rumors that the company plans construction of a new bridge across the Missouri River, near Bismarck, N. D. The NP's present triple-span, 1,514-ft. structure was completed in 1882 as a wooden bridge (at a cost of $1,000,000), rebuilt as a steel structure in 1902.

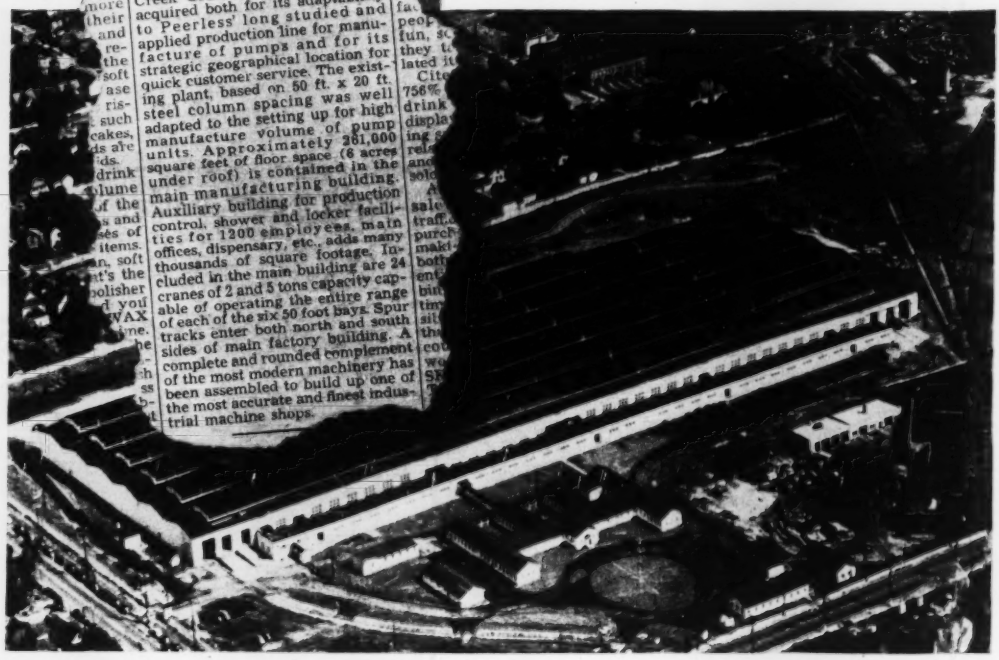
SEC POINTS WITH PRIDE—Fourteen years, almost to the day, since the Holding Companies Act became national law—a death sentence for the then-sprawling utilities holding companies—the Securities Exchange Commission took stock of the record and found it good. In its 14 years as chief executioner, SEC has forced consolidation or absorption of 249 companies, sale or dissolution of 889 others. By the time the law expires, in 1951, the commission thinks it will have completed its mission. Best of all, said SEC, is that though holding company systems are now far smaller, physically, their assets are far larger, and all utilities are far healthier than they were.

COMPROMISE ON PRICING?—Surprised manufacturers saw a ray of light in a "personal opinion" of FTC attorney L. C. Paulson, which implied that FTC would not oppose pricing systems that would offer the customer a choice of either f.o.b. or delivered price. On the anxious seat since the Supreme Court ruled that the basing-point system was illegal, regardless of collusion (ENR May 5, p. 5), industrialists had asked for a Federal Trade Commission interpretation. Paulson's statement was carefully labeled as not official FTC dictum, but the businessmen saw it as offering a "middle ground" to allow them to meet competition and retain the convenience of delivered price systems for their customers.

New Eastern Facilities For Peerless Pump Division On Huge Site At Indianapolis

INDIANAPOLIS, IND.—Peerless Pump Division's new Indianapolis works is the former Fall Creek Ordnance Works and was acquired both for its adaptability to Peerless' long studied and applied production line for manufacture of pumps and for its strategic geographical location for quick customer service. The existing plant, based on 50 ft. x 20 ft. steel column spacing was well adapted to the setting up for high manufacture volume of pump units. Approximately 261,000 square feet of floor space (6 acres under roof) is contained in the main manufacturing building. Auxiliary building for production control, shower and locker facilities for 1200 employees, main offices, dispensary, etc., adds many thousands of square footage. Included in the main building are 24 cranes of 2 and 5 tons capacity capable of operating the entire range of each of the six 50 foot bays. Spur tracks enter both north and south sides of main factory building. A complete and rounded complement of the most modern machinery has been assembled to build up one of the most accurate and finest industrial machine shops.

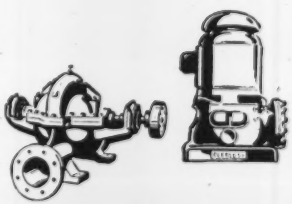
NEWEST PUMP FACTORY IN THE U. S. GEARED TO HIGH SPEED PRODUCTION OF HORIZONTAL AND VERTICAL PUMPS



Peerless Pump plant at Indianapolis, Indiana

19 ACRES OF MODERN PLANT FACILITIES DEVOTED EXCLUSIVELY TO MAKING PUMPS

Here is one of America's most modern pump factories. Peerless Pump's new plant at Indianapolis is devoted entirely to making pumps and handling pump service. All types of pumps in the Peerless line, horizontal centrifugal, deep well and close-coupled turbines, Underwriters' approved fire pumps and domestic water systems are made and serviced in this plant. No expense has been spared in tooling Peerless-Indianapolis to insure accurate pump production; testing facilities at Indianapolis are being incorporated into one of the largest pump laboratories in the country. Add these factors to sound basic Peerless pump designs, to the high caliber of Peerless personnel and to Peerless extensive manufacturing facilities at Los Angeles, California, and they combine to make available as comprehensive pump service as is offered to pump owners and buyers anywhere. Peerless-Indianapolis is open for your inspection. You are cordially invited to see for yourself how Peerless-Indianapolis will exactly fit your needs for pumps and pump service. Plan with Peerless; there are horizontal and vertical types for most services, in all industries. Descriptive Bulletins are available on all types upon request.



Peerless
VERTICAL AND HORIZONTAL
Pumps

fmc PEERLESS PUMPS

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FOOD MACHINERY AND CHEMICAL CORPORATION
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District Offices: New York 5, 37 Wall Street; Chicago 40, 4554 North Broadway; *Atlanta Office:* Rutland Bldg., Decatur, Georgia; Omaha, Nebr., 4330 Leavenworth Street; Dallas 1, Texas; Fresno, California; Los Angeles 31, California

A Local Problem

FEDERAL AID for local rural roads is now being discussed before the Senate subcommittee on roads, which has before it two bills, one authorizing appropriation of $100,000,000, the other $150,000,000 for expenditure on local roads during each fiscal year beginning July 1, 1950. Naturally, those responsible for the construction and maintenance of such roads would welcome federal contributions. But a careful analysis of all factors bearing on the proposal will, we believe, lead to the conclusion that inauguration of federal aid for roads serving fewer people than roads now included in the secondary road federal-aid program would be an unsound, probably wasteful step.

Thomas H. MacDonald, head of the Public Roads Administration, put his finger on the basic weakness of such a proposal when he said that the surfacing of roads for that kind of service is light and wears out quickly; hence, annual maintenance and reconstruction are more important than first cost. Consequently, a federal contribution to the first cost, unless followed up by continuing contributions to the cost of maintenance and reconstruction, will be dissipated completely within a couple of years.

Then too there are about 18,000 local road agencies in the country with which the PRA would have to work under the proposed legislation, which bypasses the state highway departments. The cost of proper supervision of expenditure of the federal money under such condition would be prohibitive.

Local roads are and should remain a local responsibility. If Congress believes that the local road agencies should have assistance, the way to provide it is for Congress to withdraw from one or more of the taxing fields that it now preempts, letting the states take over those sources of revenue. Some of that income could be devoted to local roads.

Bricks Per Hour

AMERICAN BUILDERS, bothered with bricklaying productivity, can perhaps find some small comfort in reports that British contractors have the same troubles. A study made on twenty experimental houses over there recently turned up some interesting facts and figures. During periods of actual working, brick were laid at a rate of 120 per hour. The Department of Scientific and Industrial Research terms this good, but points to the great amount of non-productive time that occurs in the work day. Some of this, but by no means all, is unavoidable, being used for measuring, plumbing, cutting bricks and erecting door and window frames. Of the avoidable time lost, 70 percent results from voluntary intervals of work stoppage during work periods while 30 percent is due to late start, early finish and extension of lunchtime.

Some of the voluntary work stoppage is no doubt justified; steady manual labor requires intervals of rest and breath-catching. But the remaining non-productive time is plainly loafing. The British report does not state how many brick are actually laid, in say an 8-hr. day, but it is considerably below the 960 indicated by the typical hourly rate.

Even 800 brick a day would be welcomed by almost any American contractor. The 1,500 brick a day that an earlier generation is said to have laid regularly is obviously unattainable today. Yet something substantially better than the 400 so frequently cited is demanded. A careful study of bricklaying productivity in the United States, like the one that was carried out in Britain, might point the way to some remedies.

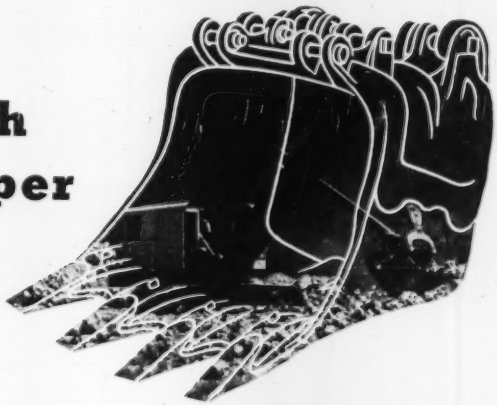
The Holland Tunnel Fire

THE EXPLOSION and fire of May 13 in the Holland Tunnel at New York has one favorable aspect. It gives greater assurance than we have ever had before that the protection afforded by the ventilating system and fire-fighting facilities of that tunnel and all vehicle tunnels patterned after it are probably as safe as could be devised.

A worse combination of circumstances than attended the Holland Tunnel accident is difficult to imagine. The tunnel was operating at full capacity. A truck, loaded with drums of a poisonous and inflammable gas, was in the line of traffic. It caught fire and exploded. Yet, no lives were lost, and although the number of people who suffered from smoke and gas fumes is estimated at over 60, none is believed to have been permanently injured. This was due to the fast and efficient work on the part of the tunnel operating staff in getting the ventilating fans operating at full capacity in a matter of minutes and in getting rescue and fire crews into the tunnel. The casualty list gives convincing evidence of the fidelity of the tunnel patrolmen.

This splendid record should not obscure the fact that added precautions must be taken to prevent a repetition of such an accident. Regulations against transport of inflammable or poisonous liquids or gases through the tunnel, which are issued to shippers do not appear to be enough. There should be conspicuous signs at the tunnel portals which state that such shipments are forbidden without a permit. These signs should declare that truck drivers as well as owners will be held responsible for violations. Such a plan would make doubly sure that neither the public nor the tunnel patrolmen will again be subjected to such a holocaust.

A Good Shovel Works Better with an Amsco Dipper



Made of austenitic manganese steel for resistance to impact, pressure, and abrasion, Amsco dippers also provide the advantages of fast, full loading and quick, complete dumping. Design of Amsco dippers is based on an experience of forty years in fields of power shovel application. To make a good shovel work better, specify an Amsco dipper. Available in all standard capacities, up to ten cubic yards . . . and in types as outlined below.

AMSCO RENEWABLE LIP DIPPER

A strong, long-life dipper, designed for low overall cost. Patented Amsco construction makes it possible to replace worn lip quickly, holding down-time to a minimum. Teeth are also renewable and reversible.

AMSCO WELDED TYPE DIPPER

Designed to meet the demand for a strong durable dipper at minimum weight . . . for fast digging and economical use of power. Built in two types: Two Part (1½ to 2 yards) and Four Part (2 yards and up); sections are joined by Amsco's patented plug welding process, with all joints overlapped for rigidity. Teeth reversible for double duty . . . and replaceable.

AMSCO DIPPERS for Special Purposes

AMSCO manufactures the famous Missabe Dippers and a wide range of cast manganese steel dippers and buckets for pull-shovels and underground work . . . as well as dippers of any design to meet any particular application.

AMSCO PARTS

AMSCO supplies cast manganese steel dipper and shovel parts, including: teeth, renewable lips, bails, racks and pinions, sheaves, gears, crawler parts . . . as well as a complete line of welding products for hardfacing and reclamation.

For full information on Amsco Dippers and parts—write for Bulletin 547-DS.

AMERICAN Brake Shoe COMPANY

AMERICAN MANGANESE STEEL DIVISION
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ENGINEERING NEWS-RECORD

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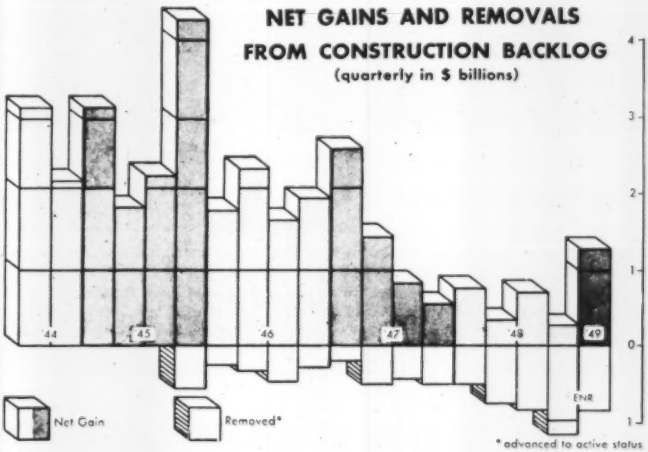


Construction backlog rises as plans outstrip awards

While commercial and governmental groups were getting their construction programs well under way in first quarter 1949, industry was planning, but adopting an attitude of "wait and see." As the second quarter began, there were signs that the waiting period might be ending.

This fact was clear last week as ENGINEERING NEWS-RECORD added up its construction backlog figures for four months of 1949. The figures showed:

1. The total backlog increased at the greatest rate since mid-1947—reaching $44.6 billion by the end of April—largely due to the sharp increase in proposed industrial construction.

2. The backlogs of public buildings and commercial projects (mass housing, stores, schools, churches, hospitals) gained at about half the rate they did during the same period last year.

The net increase in the total construction backlog was $1.3 billion during the first quarter—five times the previous quarter's gain. This gain reflected the excess of new planning over proposed work advanced to the contract stage. Nearly 40 percent of the net gain—$511 million—was the increase in plans for proposed industrial construction; industrial contracts "advanced to active status" totaled only $81 million.

Heavy first-quarter backlog gains are also shown in the fields of highway, earthwork and drainage, bridges and unclassified construction. Waterworks and sewerage showed small gains.

It appeared probable that industrial planners held up their construction programs on account of business uncertainty in the early months of the year: A brightening economic picture in April resulted in more work coming out of the industrial backlog than went in.

Other prospective builders may be waiting to take advantage of falling construction costs—or to see the outcome of administration tax proposals.

This April upswing made itself felt, as figures began to come in for 1949's second quarter.

Highway projects moved rapidly to active status in April, causing a corresponding drop in the backlog for the month. With the shortage of highway engineers becoming less and less critical, the states are now scrambling to make the most of available federal appropriations. Earthwork and drainage, waterworks, and sewerage joined in the April change of pace—with reductions in all three backlogs.

Continued gains were shown by public and commercial backlogs in April—and also by bridges and unclassified work. Although only four of the nine classifications did gain during the month, the volume was large enough to offset reductions, and the national backlog increased.

New England has shown the strongest regional gains this year with a nine percent boost in its total backlog. Both the South, and west of the Mississippi are low with only a two percent gain for the four months.

By states, Idaho is out in front so far with a 36 percent addition to its backlog. Arkansas follows at 23 percent, Vermont at 21 percent, and the Connecticut backlog gained 15 percent. Idaho, Vermont and Connecticut (plus New England as a whole)

(*Continued on p. 14*)

GROWTH OF CONSTRUCTION BACKLOG

Year	Total Backlog	Net Gain		Removed*	
1944	$16,615,028	.....	.....	.....	....
1945	28,001,922	$11,386,894	69%	$ 556,182	3.3%
1946	35,557,452	7,555,530	27%	1,302,371	4.7%
1947	40,978,529	5,421,077	15%	1,764,925	5.0%
1948	43,194,282	2,215,753	5.4%	3,258,482	8.0%
1949 (4 mos.)	44,631,897	1,437,615	3.3%	1,076,145	2.5%

* *advanced to active status.*

NEWS BRIEFS

Army engineers are ready to seek bids soon on the construction of the $10,000,000 Philpott Dam across the Smith River, several miles upstream from BASSETT, VA. The concrete structure will be about 920 ft. long and have a maximum height of 220 ft. above the foundations.

Officials of RICHMOND, IND., and Wayne County expect to open bids this summer on a $1,250,000 highway structure, the main part of which is a bridge across Whitewater River, to replace the existing Doran Bridge, now closed to traffic. The bridge and approaches will be 1,000 ft. long. Pierce & Gruber, Indianapolis engineers, have prepared plans.

A $1,500,000, 11-acre shopping center, containing a department store, supermarket and other facilities, will be built by British Properties Ltd. in WEST VANCOUVER, B. C. One of the largest in Canada, buildings will have a floor area of 150,000 sq. ft.

Construction of millions of dollars worth of athletic plants is made possible by a new law in PENNSYLVANIA which permits the Public School Authority to construct such plants for local school districts on a rental basis. The authority was set up in 1947 to help school districts unable to finance needed new construction.

To meet an unprecedented public demand for new school buildings, $18,000,000 will have to be spent by the government and local school boards, W. P. Percival, director of Protestant Education for the PROVINCE of QUEBEC has announced.

The University of Utah Board of Regents has announced plans to build new dormitories on its SALT LAKE CITY campus. The estimated cost of a dormitory to house 300 men is set at $1,575,000. Enlargement of the present Carlson Hall women's dormitory from 75 to 300 units is expected to cost $1,075,000.

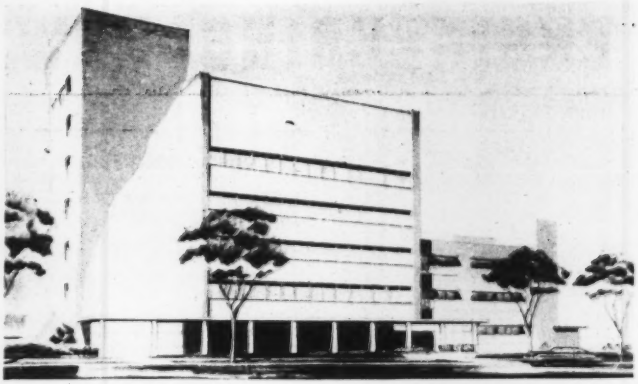
A survey by the fiscal policies committee of the WISCONSIN Association of School Administrators indicates that communities in that state need to spend $150,000,000 on new high school buildings within the next five years.

The Bureau of Labor Statistics reports that in non-farm areas of the United States foundations for 158,000 new homes were put in place in January, February and March of this year. Commenting, the National Association of Home Builders said that this unusually fast early-year building pace will be nearly doubled during the second quarter when better weather conditions prevail.

Pushing what it called the most ambitious road construction program ever undertaken in MARYLAND, the State Roads Commission already has scheduled projects costing an estimated $40,000,000 for this year, with more to come. And in KENTUCKY a record $48,798,172 has been budgeted for road building and maintenance for the year which began April 1.

Morrison-Knudsen Co., has been awarded a $2,600,000 contract for a hangar for the Pan American Airways at the BOSTON, Mass., airport.

The ONTARIO Department of Highways has announced plans to build a bridge 125 ft. above sea level over the Burlington Ship Canal near HAMILTON. At present, Queen Elizabethway from Toronto to Niagara Falls is blocked at the canal when the lift bridge is raised to allow ships to pass. The new bridge will require grading of the highway for about one half mile each side of the canal. It will also require building a cloverleaf for another Toronto-Hamilton-Niagara Falls highway which at present crosses the Queen Elizabethway at grade.



MAYO CLINIC ADDITION—Work started May 1 on this $2,000,000 medical sciences building at Rochester, Minn. The 5½-story structure will be framed of reinforced concrete, supplemented by some steel trusses and joists. Completely air-conditioned, it will have windows on east and west sides only and be faced with brick with aluminum spandrels. Ellerbe and Company of St. Paul is engineer-architect and Stocke and Olsen, Rochester, is general contractor.

Pollution control board holds first meeting

The newly-appointed Water Pollution Control Advisory Board held its first meeting in Washington May 9 and 10. A prime purpose of the meeting was to start development of a master plan for safeguarding the quality of the nation's water resources, Dr. Leonard A. Scheele, surgeon general of the Public Health Service, announced.

As no money has been appropriated to carry out provisions of the Water Pollution Control Act, under which the board was set up, the program is still in a formative stage. The board —appointed in part by the President and in part by government department heads (ENR Feb. 24, p. 14)—will review policies and programs of the Public Health Service and will assist in drawing up a blueprint for the remainder of the five-year program called for by the act.

An immediate problem is the development of comprehensive programs for controlling pollution of interstate waters and tributaries.

The Water Pollution Control Act aims to help states control pollution of the nation's streams and lakes. A comprehensive water pollution control program—to be carried out jointly with the Federal Works Agency—is being set up.

This program is to be carried out under a broad policy laid down by Congress to recognize, preserve and protect the primary responsibilities and rights of states in controlling water pollution.

N. Y. tunnel, damaged by blast and fire, is returned to service in 56 hours

Begin investigation as to how carbon disulphide truck was let enter eastbound Holland tube—No permanent damage to structure

Having come through its first major accident test—a terrific five-hour fire fed by exploding drums of carbon disulphide—without basic structural damage, the south tube of New York's Holland Tunnel was in nearly full operation May 16, after a 56-hour shutdown.

The tunnel was closed to traffic May 13 at 8:48 a.m. when the cargo of a truck carrying more than 4,400 gallons of the highly volatile liquid began to explode. Fire quickly engulfed 23 other vehicles in the tube, and the great heat fused telephone, cable, lighting and signal system wires, bringing all traffic—and much of the communications of the New York Metropolitan area—to an abrupt halt.

Even as fire companies from Jersey City and New York, and tunnel crews, rushed to fight the blaze and assist motorists and others nearly overcome by the fumes, three separate investigations were gotten under way. Two of these—both by New Jersey authorities—were started to determine how the truck was permitted to use the tunnel in direct violation of Port Authority and Interstate Commerce Commission rules covering the transportation of such liquids as carbon disulphide.

Port Authority regulations—distributed to all major trucking concerns—prohibit the transportation of more than one 55-gal. drum of carbon disulphide through the tubes.

The fire fortunately occurred at a point 1,884 ft. from the New Jersey portal of the tube at a point almost midway between the land and water ventilating structures. The section—on an upgrade toward the Jersey mainland—is supplied with air, and has its exhaust facilities, in the landward ventilator.

As soon as signal systems brought news of the fire, the three huge exhaust fans in the ventilating structure were pushed to their last notch of speed—supplying at that speed 200 percent of normal exhaust. Two of the fans went out of service after about an hour, as their wiring connections were fused by the heat below, but the third fan continued to operate during the entire proceeding.

The air supply duct, running under the tunnel roadway, was not affected by the blaze at any time, and the supply of air was speeded to full capacity to provide ample ventilation for firemen and for any motorists or authority personnel who might have been trapped. John Kyle, Port Authority chief engineer, said they had a choice of "not feeding oxygen to the flames and suffocating the firemen, or taking our chances and providing the best ventilation we could." They provided the ventilation.

The heat destroyed and brought down a 500-ft. section of the hanging concrete ceiling that also forms the bottom of the exhaust duct, but authority engineers said that the upper part of the tunnel continues to act as a plenum chamber and that the exhaust fans can still evacuate vitiated air, although not as efficiently as formerly.

Immediate inspection of the tunnel proved that the intake duct under the roadway—of steel I-beams encased in concrete—was entirely undamaged. The granite-block roadway surfacing, protected in part by a covering of debris, was also apparently undamaged, although asphalt jointing between the blocks was damaged.

Mr. Kyle said May 16 that the 500 ft. of hanging ceiling would not be replaced in concrete. Instead, a metal ceiling will be put in, to be covered with concrete later. The decision was based entirely on the desire not to block off traffic with forms that might be necessary for replacement with concrete.

Other repair work—estimated unofficially at $500,000—will include replacement of about 800 ft. of tile on both walls of the tube, and repair and replacement of wiring, ducts and communications systems.

The damage was the first structural damage of any kind to occur in either the Holland Tunnel or the Port of New York Authority's other underriver artery, the Lincoln Tunnel, Mr. Kyle added.

Truman signs pay measure; Straus-Boke rider stands

Another strong protest against the ousting of Commissioner of Reclamation Michael Straus, and Regional Director R. E. Boke accompanied President Truman's signing last week of a special congressional resolution.

But the rider still stands and the two non-engineer reclamation officials remain off the government payroll (ENR March 31, p. 29).

The resolution makes temporary appropriations for several purposes—the most urgent being to pay federal employees who have gone unpaid for several weeks. The payless payday emergency—affecting 20,000 or more on government rolls—left the President little choice.

Following the signing of the emergency measure, House-Senate conferees agreed on the two appropriation items which had made the temporary money bill necessary. A joint conference agreed that (1) White House reconstruction should wait for a second deficiency bill and (2) the Straus-Boke disbarment rider attached to a deficiency appropriation bill last year by the 80th Congress should stand.

In a statement released when he signed the emergency money act, President Truman spoke out in blunt, measured terms: "I have signed the joint resolution with regret, because it contains a provision to which I strongly object. . . The prohibition against paying the salaries of the officers in question should be terminated, and I am confident that the Congress will terminate it at an early date."

Bond issue finances Brooklyn-Battery tube

Permanent financing of New York's Brooklyn-Battery tunnel has been arranged by the Triborough Bridge and Tunnel Authority with the sale of $141.5 million of bonds to private and institutional investors.

A major part of the proceeds—$107.7 million—will be used to repay an outstanding Reconstruction Finance Corporation loan, with the balance to be spent on completion of the tunnel, the 1,050-car Battery parking garage, improvements on related connections and operating expenses.

A nationwide syndicate of underwriting houses headed by Dillon, Read & Co., Inc., bought $21,225,000 out of $41,500,000 worth of fifteen-year 2½ percent bonds, and $84,900,000 out of the $100 million in twenty-year 2¾ percent bonds. The rest of the issue was sold directly to several banks

It is estimated by the engineers, Madigan-Hyland and Coverdale & Colpitts, that combined tunnel and TBTA bridge revenues will enable the authority to retire these new bonds by mid-1965. Tunnel revenues of 35 cents per car are pledged for the benefit of the new issue, and bridge revenues will be applied after the retirement of a 1945 bond issue.

Virginia high court OK's Arlington incinerator

Ruling approves consulting engineer's evaluation of bids and permits county officials to exercise discretionary powers

The appeal from the District Court's dismissal of the petition for a writ of mandamus—that would have compelled the Arlington County (Va.) Board to reverse its contract award for a 300-ton incinerator project—was recently denied by Virginia's Supreme Court of Appeals.

Following the County Board's award of the $646,757 project to the Nichols Engineering & Research Corp. of New York City, a suit to upset the award was initiated by the Morse-Boulger Destructor Co. and several taxpayers. The Morse-Boulger group alleged, among other things, that the engineer's method of bid evaluation was erroneous and arbitrary and later amended their petition to include a charge of fraud.

After exhaustive hearings and presentation of evidence, both courts held that "there had been in fact competitive bidding . . . evaluation made of bids was proper . . . and the County Board had not acted arbitrarily but in proper exercise of its discretion pursuant to notice in the proposal for bids."

In regard to fraud, the high court abruptly dismissed the charge saying, "It is sufficient to say that the evidence fails to support the charge."

The incinerator is now being built by the Nichols Engineering & Research Corp. Consulting engineer for the project is Alexander Potter Associates, represented by M. H. Klegerman.

Engineers asked to bid on Indianapolis sewers

Proposals for furnishing the engineering work required to prepare detailed construction plans, maps, profiles, drawings, specifications and estimates of the cost of certain main sewers and storm relief sewers in Indianapolis, Ind., are to be received by the city's Board of Public Works at its office at 10 a.m., June 23.

The advertisement sets forth in detail the sewer work to be covered and the extent of the engineering work required. Bidders are required to "demonstrate to the full and complete satisfaction of the Board of Public Works that such bidder has the proper training, experience and personnel needed to perform such engineering services, and that such bidder has the necessary financial resources and facilities required to carry out the work in proper manner." Also, each bidder is required to submit with his bid a statement containing "all pertinent information as to his experience and qualifications."

It is understood that invitations were sent to 18 engineering firms.

M. G. Johnson is engineer for the Board of Public Works of Indianapolis.

THE MOLES ELECT—Carlton S. Proctor (left) accepts the applause of fellow Moles as he takes over the presidency, just vacated by J. Rich Steers, Jr. (center). Alfred N. Warwick, secretary, appears beyond the lectern. The Moles are New York heavy-construction men.

Union-contractor group plans $20 million housing

Electrical contractors have joined forces with an electrical workers union to build a 2,000-unit, cooperative, garden apartment project in Queens, N. Y., to cost $20,000,000.

Plans for this development, which is expected to be fully exempt from state taxes and partly exempt from city taxes, were announced last week by Herman T. Stichman, New York State Housing Commissioner.

Employer members of groups affiliated with the Joint Industry Board of the electrical industry in New York City have indicated that they would take up to $300,000 in "sponsors' notes" for preliminary financing of the project. The industry board has committed $200,000. Local 3 of the International Brotherhood of Electrical Workers, AFL, which has 28,500 members, is planning to follow suit with $300,000. And the pension committee of the industry board is considering investing $250,000 and already has turned over $62,500 of this to the cooperative—First Housing Company, Inc.

For purchase of the apartments, a $250-per-room down payment will be required. Total monthly carrying charges are estimated at $16 per room initially, but are expected to be reduced gradually to average about $13.50 a room over the 40-yr. life of the mortgage. Some apartments may be rented.

The project will be built under the limited-dividend housing law of New York State. Originally passed in 1926 to encourage construction of homes for persons in the lower-income brackets, the law offers exemption from all state taxes and from local taxes on buildings and improvements in return for a limitation on rents and a restriction of dividends to six percent. The state also authorizes financial institutions to invest in the stock of state-supervised limited-dividend corporations. One union—the Amalgamated Clothing Workers—has built several large apartment houses in New York City under these provisions.

Move to study smoke nuisance control problem

Action for the proper control of smoke nuisances was reported last week on two widely separated fronts.

In Pennsylvania, the state senate approved a bill to carry out a full-scale study of the problem of smoke control. The study will be made by the joint state government commission.

Meanwhile, at Muncie, Ind., industrial leaders decided to take the initiative in formulating a constructive, long-range program to eliminate air pollution by abating nuisance smoke, soot and fly ash from factory heating plants.

The move was made in a meeting of the Muncie Chamber of Commerce after the group heard reports from combustion engineers of the Coal Producers Committee for Smoke Abatement, of Cincinnati.

Tulsa engineers protest "extra-curricular" jobs

A delegation of civil engineers in Tulsa, Okla., recently protested to Mayor Roy Lundy because of the practice of city-employed engineers doing outside work on sub-division, street, water and sanitary sewer jobs.

The mayor said that it was up to the Oklahoma Society of Professional Engineers to decide whether such city engineering employes' activities are ethical, but one of the protesting engineers is quoted as saying that the matter had already been submitted to the ethics committee of the local society of professional engineers but that no action had been taken.

Mexico C.E.'s hold international meet

During the week of April 30-May 7 the First International Civil Engineering Congress was held in Mexico City.

The meeting, organized by the Society of Professional Civil Engineers of Mexico (Colegio de Ingenieros Civiles de Mexico), included in its scope the whole of the civil engineering field, and was sponsored by the Mexican government through several of its technical branches. President Miguel Aleman himself spoke to the delegates.

Almost 200 papers were presented to the 11 sections into which the meeting was subdivided. Also, visits were made to the new water supply system for the city of Mexico, and to the Valsequillo Dam and irrigation district in nearby Puebla. The hydraulic laboratory of the Department of Hydraulic Resources was also inspected.

International aspects of the meeting were apparent by the presence of over 130 foreign delegates, who came mainly from Spanish-speaking countries in North and South America. Twenty-four countries were represented. Among the more than 30 U. S. delegates were Lawrence Peterson of Milwaukee, Wis., Edward Anson of New York, Howard Peckworth of Chicago, Harold Westergaard of Harvard University, Arsham Amirikian of the U. S. Navy, Prof. Eugene Grant of the University of California, Prof. Mario Salvadori of Columbia University, and Ralph Van Derwerker of Washington, D. C. Mexican engineers predominated, and the total registration came close to 900.

Continuation of the idea of international civil engineering meetings was approved, and the date for the next one was set for 1953. No place was set for it.

The organizing committee which became the permanent committee is headed by Luis Rivero-del-Val, Juan Limon-Patino and Francisco Gomez-Perez, all three well-known Mexican civil engineers, and members of the board of the Colegio de Ingenieros Civiles de Mexico.

Big road improvements assured for Philadelphia

Pennsylvania will go ahead with a multi-million dollar road improvement program in Philadelphia over the next five years, under provisions of legislation approved by the state legislature.

The Lord Bill repeals a 1945 statute which limited the expenditure of state highway funds in Philadelphia to $12,000,000 annually for new construction and maintenance. That limitation made it impossible for the State Highway Department to proceed with the comprehensive street, road and bridge construction program charted.

Passage of the bill assures an immediate start on plans for construction of the Schuylkill Expressway to mid-city Philadelphia, with connections at Roosevelt Boulevard, the Delaware River Bridge and southwestern Philadelphia. It releases funds for the completion of the Vine St.-Delaware River Bridge approach project, the proposed Pennsylvania Boulevard, the new Penrose Ave. Bridge, and other projects.

Top priority is expected to be given the Schuylkill Expressway which will run from the eastern terminus of the Pennsylvania Turnpike at King of Prussia to the center of Philadelphia.

North Carolina to vote on local road bond

North Carolina will hold a special election on June 4 in which the voters will decide whether a special issue of $200 million in state bonds will be approved to finance a project sponsored by Governor Kerr Scott to bring every rural road in the state up to an all-weather status. This is believed to be the largest state highway bond issue ever to have been submitted to voters for decision.

North Carolina in 1931 took over all local roads, being the first state to do so. Today the state's entire 63,000 miles of highways and roads of all types come under state management.

About 12,000 miles of the state system come under primary and secondary federal-aid projects. The other 51,000 miles are rated as county roads, but the state highway department is responsible for them. North Carolina has upwards of $300 million invested in this total system, including federal-aid funds and expenditures made by local political bodies before the state took over in 1931.

Governor Scott proposes to pave about 12,000 miles of non-federal-aid roads. Remaining 39,000 miles will be improved variously, but all are to be surfaced so that traffic may get over them 12 months in the year, according to his plans.

Should the large issue be approved by the voters, bonds will be sold only as funds are needed. Work will start immediately, however, since the state has ample money in reserves set aside from gasoline tax income for the improvement of what are called county roads.

Work will be pushed as fast as practical, according to present plans. Part of the construction would be done with the state's own forces. Much contracting is planned, however, wherever it is practical to line up projects of sufficient size to warrant private firms making bids.

In another four years, North Carolina will have in sinking funds enough money to retire all of the state's outstanding highway bonds. None of the proposed new issue would be sold to mature until these reserves reach those totals.

Hooked to the question on which the voters will pass on June 4 is a 1-cent additional gas tax. North Carolina already has a 6-cent state gas tax, which has been producing over $42,000,000 a year. From this income the state is servicing its highway bonds, maintaining its existing system and covering its share of such federal-aid construction as is undertaken.

Along with most other states, North Carolina's primary and secondary highways are seriously in need of modernization and maintenance. The modernization problem is peculiarly pressing, due to the fact that the state was among the first to build an extensive system of hard-surfaced roads. Much of the system remains on original locations. Much of it also is too narrow to enable it to carry present-day traffic.

Chas. M. Noble loaned to toll road authority

Charles M. Noble, chief engineer of the New Jersey Highway Department, has been loaned for six months to the newly organized New Jersey Turnpike Authority in order to act as its chief engineer.

The turnpike authority was created this year to study the feasibility of building a toll superhighway from a connection with the bridge now under construction over the Delaware River in the southern part of the state northward through the New York metropolitan district to the New York State line, with connections to the main river crossings at New York. If it is found that a toll road over this route will pay, the authority is empowered to issue the necessary bonds and proceed with construction.

Mr. Noble served with the Pennsylvania Turnpike Commission from 1938 to 1941. Previous to that he was with the Port of New York Authority for 13 years and the New Jersey Highway Department for two years. During the war he served as a commander in the Seabees in Alaska, the Aleutians and China.

Paul L. Troast, a prominent New Jersey contractor, is chairman of the New Jersey Turnpike Authority.

Awarded contracts lag big construction backlog

(Continued from p. 9)

gained more percentagewise, through April than they did in the year ending with April 1949. This was due to a drop in backlog during the heavy construction months between April and December of last year, and more than a full recovery in the early months of this year.

Maine shows the biggest backlog drop to-date in 1949—five percent. Oregon, Maryland and Georgia are off by three percent. During the year ending in April, Oregon's backlog dipped 19 percent while Oklahoma and Wisconsin dropped 16 percent, and Kentucky 15 percent. In the same period Arkansas hit the top for gains at 39 percent, while the Iowa backlog stepped up 34 percent, and New Mexico 29 percent.

FIRST QUARTER BACKLOG GAINS

	1949	1948	% chge
U. S. Total	1,324.3	846.8	56
Total Public	427.2	316.4	35
Total Private	897.1	530.4	69
Waterworks	4.6	28.6	-84
Sewerage	2.0	15.3	-87
Bridges	81.1	15.3	430
Highways	126.7	.....	...
Earthwork & Drainage	32.7	-46.0	171
Buildings:			
Public	221.4	497.3	-55
Commercial	123.4	234.8	-47
Industrial	511.5	102.4	390
Unclassified	220.9	-.7	317

Committee investigates S. F. Bay crossing site

By resolution of the California state assembly a committee of nine has been appointed to investigate the location for the next San Francisco Bay crossing. Studies have already been completed by state authorities, and decision (in favor of a parallel bridge) was recently announced by the California Toll Bridge Authority (ENR Mar. 31, p. 23).

Committee members include five from San Francisco (where opposition to the parallel location has developed), two from East Bay Cities and two representatives at large. Employed by the committee as consultants are Ole Singtad, O. H. Ammann and T. T. McCrosky, all of New York.

The committee is purely a fact-finding body. However, it could make recommendations to the state legislature regarding future appropriations.

BACKLOG OF PROPOSED ENGINEERING CONSTRUCTION $44,631,897,000 AT END OF APRIL
(table in $ thousands; 000 omitted)

States	PUBLIC: Water-works	Sewer-age	Bridges	Earthwork Irr.-Drain	Streets & Roads	Buildings	Unclassified	Federal Government Work*	PRIVATE: Bridges	Industrial Bldgs.	Commercial Bldgs.	Unclassified	TOTAL: Private	Public	United States	States
Maine	682	4,298	1,071	2,282	29,526	28,398	34,408	11,034		3,879	7,640	15,348	26,865	100,665	127,530	Maine
New Hampshire	2,856	4,643	5,281	1,051	11,577	20,234	10,779	10,159		7,444	13,210	9,387	30,141	62,441	92,582	New Hampshire
Vermont	1,650	2,640	100	81,378	1,567	15,142	4,497	83,138		930	2,310	13,477	16,417	106,972	123,389	Vermont
Massachusetts	35,821	60,009	37,069	33,246	69,227	475,493	109,847	213,457		28,988	91,495	16,089	136,533	820,712	957,245	Massachusetts
Rhode Island	7,353	19,305	18,530	1,243	28,890	75,615	17,609	46,028	13,500	8,253	38,417	595	60,765	168,545	229,310	Rhode Island
Connecticut	8,775	33,376	18,436	86,456	99,751	265,165	54,681	139,121	230	37,887	87,614	6,324	132,055	566,640	698,695	Connecticut
New England	57,137	124,271	80,487	205,656	240,538	880,047	237,821	502,937	13,730	87,042	240,786	61,198	402,776	1,825,975	2,229,751	New England
New York	167,616	379,477	214,481	101,034	607,656	2,116,151	1,224,666	268,119		234,681	858,671	29,746	1,123,078	4,811,081	5,934,159	New York
New Jersey	64,509	82,634	69,000	26,295	142,590	254,487	128,856	61,504		195,146	110,293	62,056	367,495	768,371	1,135,866	New Jersey
Pennsylvania	91,566	206,109	121,360	219,951	372,523	476,456	326,939	296,471	2,761	393,575	358,089	101,525	853,930	2,814,902	3,670,832	Pennsylvania
Maryland	19,873	20,361	26,209	12,164	141,578	284,675	62,917	184,582		31,371	72,782	38,733	142,886	567,977	710,863	Maryland
Dist. of Col.	8,703	11,322	10,252	2,500	29,266	251,352	83,962	249,668		230	29,700	1,356	31,286	397,477	428,765	Dist. of Col.
Delaware	1,797	5,304	6,929	250	14,906		15,630	16,311		19,747	22,685	34,043	76,475	54,002	130,477	Delaware
Middle Atlantic	354,064	709,607	448,231	362,194	1,305,617	3,903,107	1,830,990	1,096,655	2,761	874,730	1,452,200	297,481	2,617,152	9,413,810	11,030,962	Middle Atlantic
Virginia	4,342	23,735	49,083	97,072	50,021	93,729	21,700	124,616		65,556	18,713	76,774	161,043	339,682	500,725	Virginia
West Virginia	1,755	23,452	1,073	19,600	4,919	41,233	38,918	30,919	175	12,186	8,200	40,068	61,259	130,950	192,209	West Virginia
North Carolina	17,433	15,808	4,919	201,335	358	94,120	25,642	251,306	95	28,609	74,178	44,305	147,187	359,615	506,802	North Carolina
South Carolina	6,713	6,145	3,834	100,686	14,866	63,013	22,182	112,062		47,739	32,101	34,807	114,647	217,442	332,089	South Carolina
Georgia	8,666	12,087	11,295	17,511	21,090	106,642	35,055	51,564	450	49,594	49,857	40,936	140,837	212,352	353,189	Georgia
Florida	26,694	61,727	47,731	76,491	38,316	123,081	55,231	102,485		28,066	203,069	54,544	285,679	429,271	714,950	Florida
Alabama	6,239	13,371	3,142	63,653	7,822	75,765	36,137	86,125		38,118	58,108	46,161	142,387	268,129	390,516	Alabama
Mississippi	2,191	9,222	1,863	39,842	9,011	41,256	16,649	55,068		52,999	17,415	82,327	152,741	121,116	273,857	Mississippi
Louisiana	6,093	19,010	22,597	180,137	7,851	84,448	63,475	219,018	6,970	79,585	54,619	91,313	232,487	583,563	816,050	Louisiana
Kentucky	7,026	22,809	6,130	216	8,299	43,765	11,575	13,558		14,302	21,246	29,147	64,695	99,820	164,515	Kentucky
Tennessee	9,274	46,177	3,870	69,516	27,333	226,932	28,579	172,997	93	51,497	65,940	56,903	174,433	411,681	586,114	Tennessee
Southern	97,428	255,646	155,517	866,039	189,892	993,986	355,143	1,219,718	7,783	468,251	603,946	597,925	1,677,905	2,913,651	4,591,556	Southern
Ohio	56,377	164,896	149,130	34,891	243,049	469,758	140,913	77,841	1,672	379,111	223,785	271,147	875,715	1,279,014	2,154,729	Ohio
Indiana	17,615	65,179	71,509	40,997	69,879	172,015	45,829	62,129	440	244,122	104,074	63,703	412,339	483,023	895,362	Indiana
Illinois	91,466	138,731	95,829	192,864	343,393	441,967	197,755	212,643	12,950	127,488	204,446	182,661	527,545	1,497,005	2,024,550	Illinois
Wisconsin	5,644	21,735	19,293	766	46,924	104,328	25,593	22,533		43,114	46,179	45,262	134,555	224,283	358,838	Wisconsin
Michigan	21,610	140,405	57,103	16,030	128,773	573,487	227,437	63,880		98,515	58,704	100,748	257,967	1,204,967	1,462,934	Michigan
Middle West	222,712	525,946	402,864	305,568	832,020	1,761,555	637,527	439,026	15,062	892,350	637,188	663,521	2,208,121	4,888,192	6,896,313	Middle West
Minnesota	13,762	26,214	21,197	4,149	20,333	116,470	42,919	26,131	1,525	49,439	41,742	73,218	165,924	245,145	411,069	Minnesota
Iowa	7,208	17,301	5,141	71,304	10,823	69,904	15,705	84,692	810	15,409	32,285	101,263	149,767	198,614	348,381	Iowa
Missouri	17,902	49,103	45,335	193,699	311,438	285,301	69,225	290,178		109,101	118,613	187,586	415,300	971,905	1,387,205	Missouri
Arkansas	8,423	21,077	20,784	239,718	45,478	55,951	39,098	248,245	150	119,793	18,485	124,790	263,190	430,529	693,719	Arkansas
North Dakota	5,624	4,505	165	204,603	334	16,969	3,887	209,542		1,153	6,685	51,186	59,024	236,382	295,406	North Dakota
South Dakota	3,366	2,544	80	271,149	10,904	9,674	16,960	281,071		1,352	4,355	21,797	27,704	314,877	342,581	South Dakota
Nebraska	4,641	13,722	5,439	161,991	14,138	56,624	33,966	190,575	400	17,141	17,387	75,105	110,033	290,541	400,574	Nebraska
Kansas	13,830	10,338	6,179	158,999	9,742	102,015	10,711	189,326		147,199	20,191	190,587	357,977	311,834	669,811	Kansas
Oklahoma	27,240	7,612	7,162	262,163	41,345	67,305	58,453	276,499	489	21,325	40,064	175,235	237,113	471,280	708,393	Oklahoma
Texas	142,002	128,355	40,832	597,369	252,303	545,337	260,398	693,752	287	1,120,546	773,520	777,994	2,672,347	1,966,787	4,639,144	Texas
Montana	3,621	5,414	67,493	265,611	34,852	35,668	14,165	266,991		19,610	14,194	14,266	48,070	426,826	474,896	Montana
Wyoming	1,406	3,481	522	201,559	1,918	10,111	5,827	205,111		25,913	6,399	29,071	61,385	224,524	285,209	Wyoming
Colorado	20,168	8,063	4,578	332,527	42,801	51,972	26,791	338,328		8,948	49,280	116,434	174,662	303,590	478,352	Colorado
New Mexico	2,371	3,248	1,397	48,651	670	56,965	38,230	99,091	50	20,325	5,417	89,558	115,350	111,536	226,886	New Mexico
W. of Miss.	288,969	301,419	227,330	3,013,484	797,477	1,480,266	636,335	3,329,992	3,711	1,477,458	1,151,017	2,028,060	4,960,246	6,749,980	11,805,226	W. of Miss.
Idaho	1,700	5,095	4,541	166,974	43,424	139,922	13,247	276,255		13,477	7,350	7,744	28,571	355,013	383,584	Idaho
Utah	6,074	12,424	2,089	144,981	40,069	33,830	15,251	157,161		18,662	21,465	60,114	100,241	256,718	356,959	Utah
Arizona	6,872	3,895		265,867	6,773	28,072	24,016	616,338		5,352	8,031	39,278	72,661	667,498	740,159	Arizona
Nevada	562	3,107	4,500	38,882	39,368	27,933	5,109	21,859		4,340	13,520	5,062	22,922	118,562	141,484	Nevada
Washington	37,768	30,482	47,036	587,273	191,443	193,205	155,557	642,226	400	56,430	134,323	15,990	207,103	1,243,264	1,450,427	Washington
Oregon	4,284	21,337	20,191	230,606	50,875	63,952	36,079	272,481		66,718	57,397	26,391	150,706	427,305	578,011	Oregon
California	92,905	169,475	60,539	923,845	378,649	863,655	636,463	1,068,159	873	271,397	869,407	361,806	1,503,743	3,123,223	4,626,965	California
Far West	190,866	245,818	138,896	2,685,528	753,102	1,336,980	885,718	3,055,478	1,273	436,526	1,111,753	536,385	2,086,007	6,193,582	8,279,589	Far West
United States	1,180,876	2,162,707	1,452,315	7,438,467	4,119,546	9,853,550	4,583,529	9,613,307	44,320	4,936,447	5,196,390	4,179,550	13,851,707	30,780,190	44,631,897	United States
Canada	105,312	213,937	294,792	518,740	1,235,437	1,338,852	1,156,046	297,446	450	779,381	191,009	1,278,542	2,199,386	4,863,316	7,062,702	Canada

* Included in Public total.

Geophysicists peer into earth's core; consider slow drift of global crust

Other reports to meeting of American Geophysical Union touch on radar surveying, Brooklyn's water table and soil studies

Nearly 1,000 geophysicists gathered recently in Washington to get the latest word on developments in their intermeshed system of related sciences. The three-day thirtieth annual meeting of the American Geophysical Union produced general papers and special treatises in the society's constituent fields, ranging alphabetically from geodesy to volcanology.

Outstanding papers told of a new theory on the makeup of the earth's core, a recent worldwide check on the pull of gravity, an optical radar system for measuring distance in surveying, and a long-range radar set for storm detection. Other papers of practical interest to civil engineers were:

(1) Slow drift of the earth's mobile crust, (2) experiments in seismic observations of man-made blasts, (3) the role of the atmosphere in carrying moisture to the Mississippi watershed, (4) the comeback of the Brooklyn water table, (5) sedimentation from forest watersheds, (6) the settling velocity of sediment, (7) rainfall factors in peak runoff rates, (8) predicting runoff from storm rainfall, (9) evaporation from large water surfaces, (10) use of radioisotopes to measure the water equivalent of snow, (11) improved stream velocity current meters, (12) wave diffraction at breakwater openings, and (13) methods of measuring soil permeability.

Surveying with radar

Two papers on special uses of radar drew much attention. Charles R. Hoover, Fort Belvoir, Va., described an electro-optical surveying system that measures distances and horizontal and vertical angles directly. The apparatus consists of an optical transmitter—to send out micro-second impulses of light—and a photo-senstitive receiver. The two parts are combined to use different annular sections of the same parabolic reflector.

An experimental model—being tested by the Army Engineer research and development laboratories—measures distances to 5,000 yd. with a probable error of 2 yd., and horizontal and vertical angles to an accuracy of plus or minus 30 sec.

Lester A. Zurcher, a scientist with the Army Signal Corps, told of a new high-power radar set designed specifically for storm detection. Set up in a favorable location, the radar unit penetrates completely overcast skies to detect thunder-storms to the limit of the horizon. The instrument already has detected clouds at 47,000 ft.

Earth's crust studies

The earth's crust is not static but mobile—from a geologic point of view—Perry Byerly, California University professor, pointed out. Slow drifts must occur, he said; it is unlikely that movements take place only at times of severe disturbances such as earthquakes.

Geodetic observations, if continued long enough, will disclose these movements, Professor Byerly maintained. Triangulations in the San Francisco Bay district from 1851 to the 1906 earthquake showed shifts in position that led to the statement of the elastic rebound theory as the cause of faults.

Between the 1906 earthquake and the next one, the geodetic record must be kept complete by frequent triangulations, the speaker declared. After the next great earthquake in the area, the drift-disturbance pattern may be apparent, he said.

For studying the earth's crustal structure by seismic waves, a group of 14 scientists reported to the seismology section that they had extended their experiments with controlled explosions and had also made use of data from commercial quarry shots. Explosions in Chesapeake Bay near Washington, they said, indicate first arrival of a compression wave with average velocity of about 6:1 km. per sec.

A striking feature of the seismograms is a strong second arrival about 85-120 km. from the blast. It comes in two seconds after the first arrival and at some places has an amplitude more than ten times that of the first.

Moisture over the Mississippi

On the role of the atmosphere as a moisture carrier, a paper by three authors—G. S. Benton, R. T. Blackburn and V. O. Snead—told how they had prepared a complete balance of the hydrologic cycle for the Mississippi watershed—on the basis of quantitative studies for selected stations.

Analysis of the results produced three significant conclusions: (1) only a small percentage of the moisture picked up from the oceans and transported over the continents is ever precipitated; (2) despite this fact, most precipitation comes from maritime air and is derived directly from oceanic sources; (3) modification of the evapotranspiration regime—due to changes in land use, for example—can have comparatively little effect on the average quantity of precipitation falling on that region or neighboring regions.

Brooklyn's depleted water table made a rapid recovery, rising 1 to 15 ft. in the 18 months following com-

(*Continued on page 32*)

OLDEST SUSPENSION BRIDGE in the U. S. observes its 100th anniversary this year. The structure spans the Ohio River on U. S. 40 at Wheeling, W. Va. Built originally in 1849 by Charles Ellet with a span of 1,010 ft., then the longest in the world, according to D. B. Steinman's "Builders of the Bridge," the span was destroyed by a wind storm in 1854 in a manner similar to the destruction of the Tacoma Narrows Bridge. It was rebuilt that year by John A. Roebling at a cost of $42,000. Today its old cables support a wood floor safe for 6-ton vehicles. Studies are under way to replace it with a structure costing $3,000,000.

ALSO RECORDED

Taking the Lead Out—The current market price for lead is $430 a ton. So the Illinois state division of waterways decided to salvage spent shot accumulated on the bottom of Lake Michigan fronting the skeet shooting range of the Lincoln Park Gun Club in Chicago. The division advertised for proposals, got one bid and issued a dredging permit to Robert Carpi of Joliet, who offered to pay the state 10 percent of the market value of all lead recovered. The state's royalty may run to $16,000.

Big Haul—A 15-ton rock crusher has been stolen from the city of San Jose, Calif. The equipment, which was obsolete, had been stored on city-owned property. Neighbors reported that a crew of men moved in with acetylene torches several week before the theft was discovered and cut the crusher in half. Then they arrived with trucks and a crane to complete the job of removal.

Sideways Elevator—V. C. Bowser recently exhibited at the Automobile Club of Michigan, Detroit, a working model of a 7-story garage equipped with an elevator that goes up and down and also sideways. According to the inventor, when an automobile is driven onto the elevator at the street level, an attendant pushes a button on a panel and the car is quickly delivered at a vacant stall on any floor. The attendant parks it and returns. It is claimed that four cars can be handled in the same time that it takes to park one in a ramp-type garage.

Spare that cat!—Army Engineers, who claim to be stopped by nothing, have been. A cat family—mother and three kittens—which moved into the gear box of a huge crane at the Engineer Research and Development Laboratories at Fort Belvoir, Va., has refused to move or be moved to make way for a painting project. When paint shop employees prepared to move the crane into the foundry for the painting, the feline family was found in the gear box. Starting of the machine would produce only catburger, while dismantling of the gear box would mean hours of labor and considerable money. The paint job was postponed.

Right Church, Wrong Pew—Because the low bidder put his bid in the wrong mailbox, Lucas County Commissioners at Toledo, Ohio, awarded the contract for a new storm sewer project to L. H. Halpin, the second lowest bidder, on his bid of $2,184.30. The offer of the Koder Construction Co., which bid $2,015.69, was rejected after Harry Friberg, chief assistant county prosecutor, said that the Koder firm was disqualified because it had placed its bid in the county commissioners' box instead of the county auditors' box, as required by public advertisement of the project.

plete shutdown—in June 1947—of all public supply wells of the New York Water Service Corp. By the end of 1948, the water table in almost the entire southern half of Brooklyn had risen above mean sea level.

Two papers discussed settling velocity of sediment. Martin A. Mason of Chevy Chase, Md., reported a recently developed theory for a manometric settling velocity tube to permit rapid, accurate determination of still water settling velocities of sediments in the sand size range.

William D. Potter of the soil conservation service, Washington, D. C., gave the results of a study (1) to establish the relationship between rainfall intensity and peak rates of surface runoff, (2) to use that relationship in determining the peak rates that might be expected for various recurrence intervals, and (3) to determine the effect of the intensity and amount of rainfall and the number of excessive storms on the magnitude of peak rates of runoff for various frequencies. Finally, he reported, the relationships developed in the study were utilized to adjust the peak rates of runoff—from watersheds of like physiography and land use—for differences in rainfall.

Describing the technique used by the river forecast centers of the U. S. Weather Bureau to predict runoff from storm rainfall, R. K. Linsley, Jr., and Max Kohler, of the bureau's Washington office, said that the overall method shows close agreement between the relations for basins of similar hydrologic characteristics. This fact, the authors suggested, bears out the conclusion that rational parameters have been adopted.

On evaporation from water surfaces, N. W. Cummings, San Bernardino, Calif., pointed out the wide discrepancies in pan records as compared with the data for lakes—compiled by the late A. A. Young and his associates. For six non-desert lakes in California, the Young data show an average loss of 54.3 in. per year and an average departure from this average of 2.75 in., or 5 percent. For two desert lakes the average is 72 in. per year, and the departure is about the same as for the non-desert data.

Seeks new census of nation's housing supply

A new census of the nation's housing supply and its condition was sought recently by James M. Ashley, president of the Producers' Council.

The volume of home building since 1940, particularly since the end of the war, may have been substantially greater than current estimates, Mr. Ashley believes

"An accurate census of housing would throw light on the number and condition of existing homes and provide a useful guide to the number of older ones that need to be replaced in the next few years," he said. "It would also provide a means for checking the accuracy of interim estimates of housing starts and of sample censuses conducted in non-census years."

Highway safety group forms regional units

Maj. Gen. Philip B. Fleming, general chairman of the President's Highway Safety Conference, recently announced the creation of five regional groups to get better results from the program for highway safety.

President Truman has asked General Fleming to continue as general chairman of the highway safety conference. The President recently nominated General Fleming to become chairman of the Maritime Commission (ENR May 5, p. 13). The General had been FWA administrator since December, 1941, and head of the Highway Safety Conference since '46.

To facilitate the exchange of facts and ideas, the Conference has grouped state with common traffic problems into five regions. Each region will have a discussion group headed by a state governor as chairman, a mayor as vice-chairman, and an experienced highway traffic official as secretary. Group meetings of the five regions will be held in auditoriums throughout Washington, D. C., June 1, 2 and 3 when the parent organization will be gathered there for its annual conference. General sessions will be held before and after the regional meeting sessions.

Regional groups are organized as follows: Region A, comprising Conn., Del., Maine, Md., Mass., N. H., N. J., R. I., Vt., D. C.; Region B, Ind., Mich., N. Y., Ohio, Pa.; Region C, Ala., Ark., Fla., Ga., Ky., La., Miss., N. C., S. C., Tenn., Va., W. Va.; Region D, Ill., Ia., Kans., Minn., Mo., Nebr., N. Dak., Okla., S. D., Tex., Wis.; Region E, Ariz., Calif., Colo., Ida., Mont., Nev., N. Mex., Ore., Utah, Wash., Wyo.

While you're looking through a transit, take a look at what's behind it

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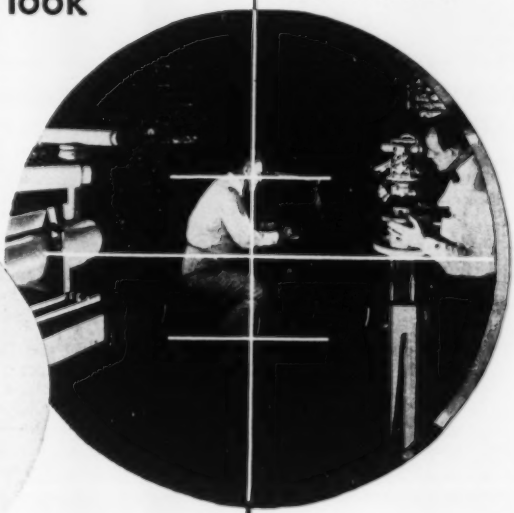

Double check the divided circles.

Collimating facilities equivalent to those maintained only by the U. S. Coast and Geodetic Survey and the Engineer Research and Development Center, at Fort Belvoir, Virginia, are used to calibrate assembled transits at Gurley. Instruments reading to one second, such as Gurley Theodolites, can be accurately calibrated to a fraction of a second; *and "20-second" transits to approximately one second.*

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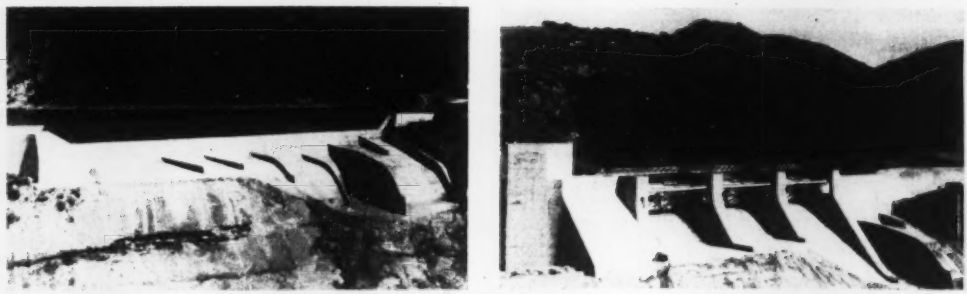


BEFORE AND AFTER the dam was raised. New spillway starts from artificial abutment with its surcharge and includes three 52-ft. wide automatic radial gates.

Dam Height Increase Eases Water Need

SEEKING at least temporary relief from dry-year water shortages the city of Santa Barbara, Calif., recently completed enlargement of Gibraltar Dam.

Built 29 years ago on the Santa Ynez River (ENR May 20, 1920, p. 1,003) the original 15,000-ac. ft. storage capacity of the reservoir had shrunken to 7,000 ac. ft. as silt and debris accumulated. Meanwhile, the city's demand for water has risen to more than 6,000 ac. ft. yearly—and Gibraltar Dam's 7,000 ft. was adequate only in years of good rainfall.

By adding 15 ft. of height on the concrete arch dam, engineers hope to restore nearly the original capacity to this major component of the city's water supply. The $848,410 job included the reconstruction of the spillway and the addition of three radial gates that have an improved automatic control mechanism.

Santa Barbara was the hardest hit of any of the California cities during the recent years of low rainfall. During part of 1948, the use of city water for watering lawns and for car washing was forbidden by ordinance. Speculators sold tank trucks of water for $10 per 1,000 gal.

Long range program

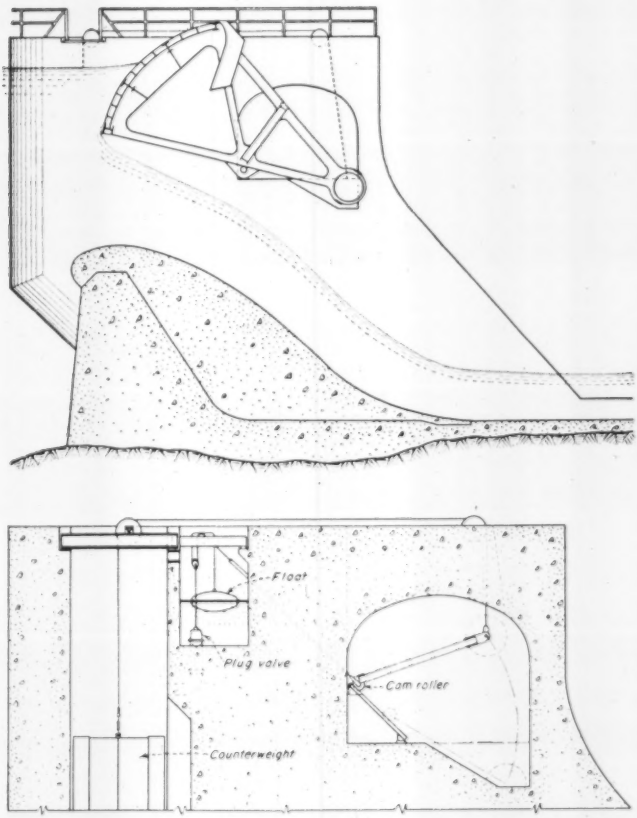
With the increased capacity of the reservoir, the water supply should be adequate during normal or wet years—1948-49 is another year of low runoff. However, the engineers warn that during a series of dry years, even the additional capacity will not be enough. Some more permanent supply is required in the form of a large dam farther downstream that creates sufficient storage to impound the waters of any major floods.

Such a program is in the initial construction stages by the U. S. Bureau of Reclamation. This involves the construction of a 200-ft. earth-fill dam (Cachuma Dam) on the Santa Ynez River having an annual safe yield of 33,000 acre-ft. and a 6.4-mile, 7-ft. dia. tunnel (Tecolote tunnel) that, together with distributing works, is estimated to cost $34,000,000. (A low bid of $5,482,865 for the tunnel construction submitted recently by Wunderlich Construction Co. was rejected as too high. The job will be readvertised soon on a new basis.)

First appropriation of $1,000,000 was made available during the 1949 fiscal year and $6,100,000 is provided in the 1950 budget. At this rate, the Bureau of Reclamation hopes to make additional water available to the city by 1951. This project will also supply a considerable amount of irrigation water for the surrounding territory as well as municipal water for Santa Barbara and its suburbs.

Actual work involved in the dam-raising job included only 16,000 cu. yd. of concrete. Of this amount, 4,165 cu. yd. was added around and on top of the left abutment thrust block. This artificial abutment is a factor in resisting overturning. Since the natural rock on which the left abutment is founded drops away sharply on the downstream side, the resultant of the overturning forces tends to fall off the rock due to

THE STEEP DROP downstream from the left abutment of Gibraltar Dam near Santa Barbara, Calif., necessitated construction of a 25-ft. high concrete surcharge.



OPERATION OF THE RADIAL GATES is completely automatic with the gates opening as the reservoir level rises.

the increased height. Thus, by adding the large mass of weight toward the upstream face of the artificial abutment, the resultant is forced to fall in the rock under the concrete block.

Radial gates with automatic operation

The three 21x52-ft. radial gates were required to impound the maximum possible quantity of water and yet allow flood flows of as much as 60,000 cfs. to pass the dam. These gates combine the automatic operation features usually connected with drum gates with the relative economy of radial gates. In case of emergency the gates can be opened by means of block and tackle.

An eccentric hinge is located partway between the gate face and the gate balance-weight. As the water level in the reservoir increases, the resultant of forces on the gate face falls above the eccentric hinge and the gates open just as they are overtopped. (A low portion in the gates acts as a sluiceway for logs and debris.)

Counterweights suspended in chambers to which water is admitted as the reservoir elevation increases control the amount that the gates open. These counterweights are only slightly heavier than water (75 lb. per cu. ft.) so the buoyant effect of the water will tend to push the counterweights up, and, correspondingly, the gate balance-weight down. Should the cable between the counterweight and the gate balance-weight be cut, the gates are so balanced that they would automatically come to the full open position.

The control mechanism provides a definite open position for a corresponding reservoir elevation. As the reservoir level rises, water enters float wells located in the piers on each side of each gate (two floats per gate). As the floats rise, plug valves open, admitting water into the counterweight wells that have a small open drain in the bottom. However, the flow passing the plug valves is usually greater than can be accommodated by the drains. The result is an increase in the level of the water surface in the counterweight wells.

When the counterweights are half submerged, the forces tending to open the gate are exactly balanced by the forces tending to close the gate. Thus when the counterweights are more than half submerged, the gate opens.

As the gate opens, the gate balance-weight pulls with it cam rollers. The opposite ends of the cams are attached to the float cable and the pull on the cables closes the plug valves. This throttling causes the inflow into the counterweight wells to decrease, lowering the water surface in the counterweight wells, and the gate tends to close. Through this system an ultimate position of equilibrium is achieved for each reservoir level.

If the reservoir water level should increase, once equilibrium is reached, the floats will be raised and the plug valve openings increased. Thus the process is to be repeated with the plug valve being closed as the gate opens. If the gate should open too far, the water level in the counterweight wells would decrease, because the cam rollers would decrease the plug valve openings and this would tend to close the gate.

Engineers retained by the city of Santa Barbara on this work were Leeds, Hill & Jewett, of Los Angeles. The work was performed under the direction of Raymond A. Hill, who devised the radial gate control mechanism. Victor S. Fago was resident engineer for the firm on the construction of the project.

Construction was handled by V. D. Case Co. for a total of $848,409.83. C. D. Clapp was superintendent for the contractor.

Road traffic jumped 3 million vehicles in '48

More than 3,000,000 private and commercial vehicles were added to the flood of traffic on the nation's highways last year. Reports by the states to the Public Roads Administration showed that 40,622,264 privately owned automobiles and commercial vehicles were registered in 1948—a rise of 3,261,801. To that may be added 529,062 publicly owned vehicles for a grand total of 41,151,326 motor vehicle registrations. This total compared with 37,841,498 registrations in 1947.

Commercial vehicles as a whole rose from 6,641,611 in 1947 to 7,360,810 in 1948, an increase of 719,199.

SOFT-GROUND SEWER BUILDING; 18-ft. lengths of 96-in. metal pipe goes into place, protected by sheet piling.

Riverfront Flood-Control Interceptor Laid in Caving Ground, Close Quarters

E. W. Brouse
Project Manager
Drake-Groves-Winkelman
Elmira, N. Y.

CAREFUL PIPE LAYING was a "must" for the contractor who built an intercepting sewer behind levees and flood walls in Elmira. In many sections the line ran through unstable ground, close to existing structures; at places it was impossible to get a crane alongside the trench.

Balancing economy against field conditions, the U. S. Engineers designed this 6000-ft. sewer partly for corrugated metal pipe and partly for concrete pipe. Metal pipe—on this job costing somewhat less per foot than the concrete pipe—was used where external loads came primarily from earth. Where additional lateral loads, such as those from adjacent flood walls, were anticipated, concrete pipe was specified for its rigidity.

The job was part of the Elmira local protection project, which began in 1946, just after the city suffered from a flash flood of the Chemung River.

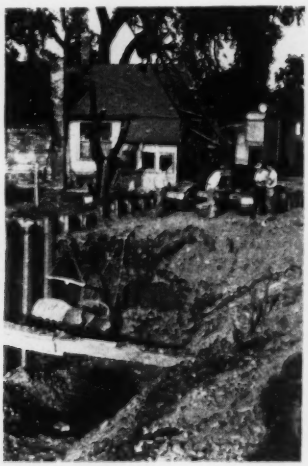
This interceptor normally will carry city storm waters into the Chemung by gravity, but during floods the storm flow will be pumped. The interceptor includes: 3,950 ft. of 48, 60, 66, 72, 84 and 96-in. corrugated metal pipe in 18-ft. lengths, asbestos-bonded, asphalt-coated and invert-paved; and 2,060 ft. of 72, 78 and 84-in. reinforced concrete pipe in 5-ft. lengths.

Partly in sheeted trench

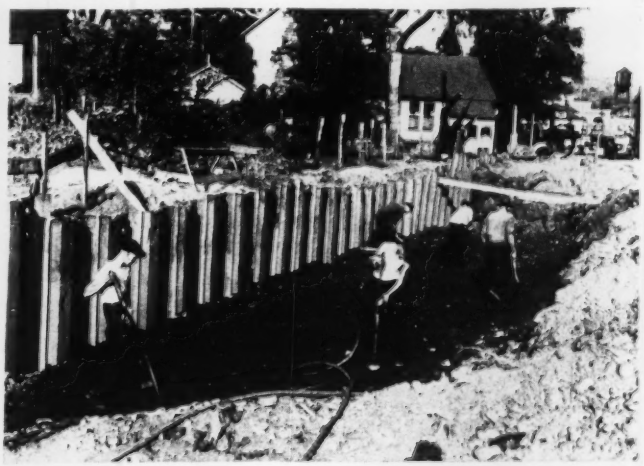
Where ground conditions were bad, the contractor drove steel sheet-piling along one or two sides of the trench location. He then excavated enough trench to accommodate one pipe length (corrugated metal pipe in caving ground). The trench bottom was shaped properly to fit the pipe. No special bedding precautions were necessary because the soil was gravel or sand.

As the illustrations show, one length was backfilled before the next one was excavated and laid. Joining of lengths was facilitated by a 24-in. half-pipe coupling band, riveted to the bottom of the leading end and to the top of the trailing end. When a new section was placed, its coupling band fitted down on top of the band of the pipe in place, whereupon workmen bolted the two together. Backfill was compacted carefully with pneumatic tampers.

For greater strength against vertical

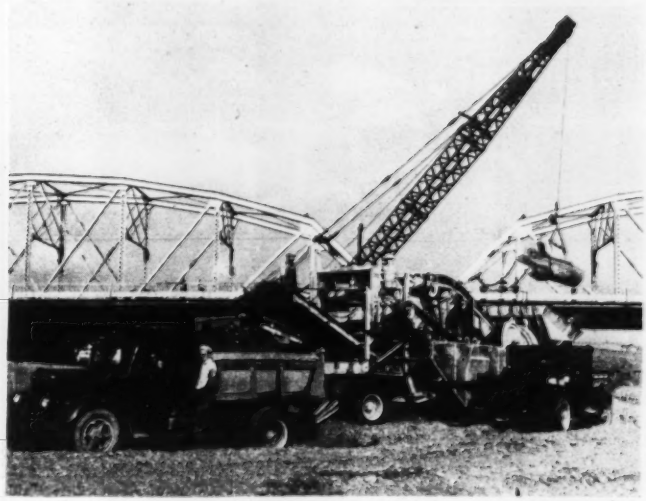


EXCAVATION WAS RESUMED after the previous joint was partly backfilled.



TAMPING BACKFILL—This material was thoroughly compacted with pneumatic tampers, to load the corrugated metal pipe evenly.

HORIZONTAL WIRE TIES held larger metal pipe in an elliptical shape.



SELECTED MATERIAL for the job was made from river-bank gravel, processed through this portable crushing and screening plant.

loads the larger-size metal pipes were elongated into an elliptical shape after their fabrication at a local plant. Hydraulic jacks and timbers were set inside, to increase the vertical diameter 6 percent; then double-wire ties were threaded through holes in the wall and tightened to hold the elongation.

After the pipes were in place and the backfill compacted to a point well above the pipe, the ties were cut. The pipe regained only a slight amount of horizontal diameter, leaving it elliptical for an added factor of strength.

The last illustration shows one section where cranes couldn't install the pipe. Here, cantilevers built out from the bulldozer frame were inserted in the pipe lengths and raised for moving the pipes into position lengthwise.

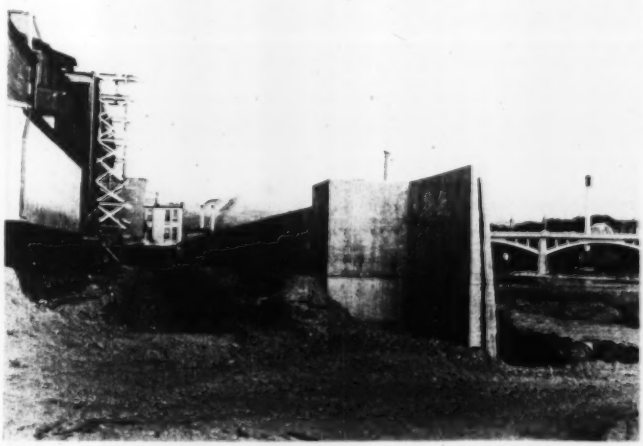
Concrete pipe work

In the narrowest spaces between buildings and floodwalls, the concrete pipe was installed. The engineers anticipated that during floods movements of the concrete T-walls would set up lateral or bending stresses that concrete pipe could resist.

Methods of excavating, setting and backfilling the 5-ft. lengths of concrete pipe were similar to those for metal pipe. Rubber gaskets were cemented to the tongue of the pipe, at a plant set up in Elmira for this job. The groove was cemented just before the lengths were joined.

Special problems were encountered where the interceptor went under existing structures. For example, a section of 84-in. corrugated pipe had to be placed under the approach to a bridge. Rather than congest traffic and disturb existing facilities, the contractor elected to tunnel under the approach. A subcontractor performed this work in conjunction with the general contractor, driving a 96-in. liner-plate tunnel 60-ft. long, through which 84-in. metal pipe was threaded, placed on line and grade, and secured by pressure grouting.

This work was done under the direction of the Baltimore office of the U. S. Engineers, Lt. Col. A. C. Welling, district engineer; B. C. Samples, chief of operations; Clyde M. Erickson, followed by James Weaver, resident engineer. Burns & Kenerson, Boston, Mass., were consulting engineers on the interceptor sewer. Drake, Groves, Winkelman, was the contractor; E. W. Brouse, project manager; H. J. W. von Holten, engineer for the contractor. The construction department of Armco Drainage & Metal Products, Inc., assisted on the tunnel.



CLOSE QUARTERS—Between the flood wall and existing buildings, pipe was moved lengthwise on arms projecting from bulldozer frames. Fortunately the ground here was solid enough to permit long trenches for bulldozer travel.

A REDUCTION IN LABOR was effected through use of precast wall panels on this eight-story concrete building in Columbia, S. C.

Precast Wall Sections Cut Cost Of Office Building

A COMBINATION of large precast wall sections and reinforced concrete columns saved about $100,000 in the construction cost of the eight-story Owen Building at Columbia, S. C.

AN ENTIRE WALL SECTION, complete with windows, is pulled into position between columns

Most of the savings were achieved through labor, since the work required only three skilled cement finishers and fewer skilled carpenters than for cast-in-place construction. Total cost of the $720,000 building was estimated at $8.10 per sq. ft., including air conditioning, elevators and other equipment.

The building was built over and to the rear of an existing 28-ft. wide by 160-ft. long, two-story building, without interfering with the tenants. Pipe columns shored up the structure until continuous footings could be poured 12 ft. under the old wall for the entire length of the building.

The new structure has four rows of columns, 16 ft. on centers, for the 160-ft. length, and is 70 ft. wide. The arrangement of the columns provide three bays, respectively 25 ft. 1 in., 16 ft. 4 in., and 28 ft. 10 in. wide.

The precast wall slabs were made from only one set of forms, fabricated on the job and moved from floor to floor as the work progressed. Eight inch wood edge forms for these slabs were laid directly on the floor opposite the erection point, with framing for windows and openings set in correct position within the forms. The window sash was cast in place in the slab.

Reinforcing for the wall panels consisted of 6x6-in. No. 6 wire mesh. Sidewall panels were 11 ft. 6 in. high on the first floor, and 8 ft. 8 in. high on the upper floors, where a typical panel weighed 6000 lb.

To provide support against possible buckling and bracing for lifting from the floor, 8-in. I-beams were strapped to the upper side of the panel with bolts cast in the slab. A hand winch was used to pick up the slab and hold it until a cable from a winch on the floor above was attached for further lifting and setting in place. Only two skilled workmen, with unskilled helpers, were necessary for placing the wall panels.

Joints between panels, pilasters and spandrels were then calked with mortar on the outside and later the exterior of the building was finished by hand rubbing. Oakum, dipped in cement, was used to calk the inside joints for a distance of one inch. All inside walls were then completed by the addition of only a finish plaster coat applied directly to the surface of the vermiculite concrete.

Floors are 2-in. poured slabs over bar joists with asphalt tile covering. The roof consists of vermiculite-concrete cast-in-place slabs, with built-up roofing of felt, tar and gravel.

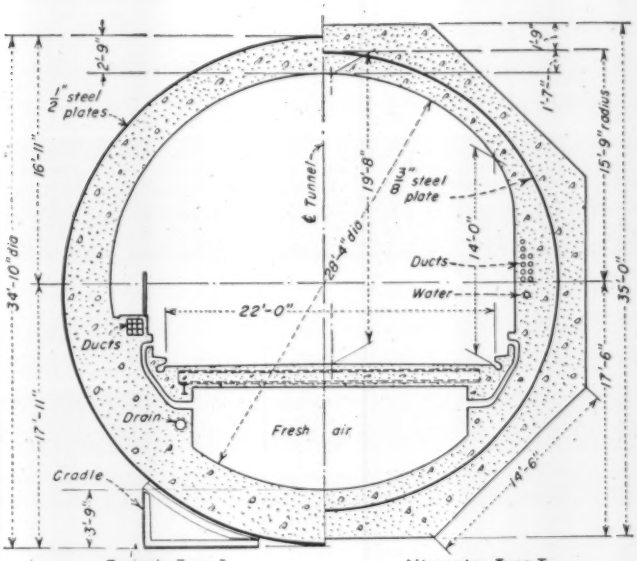
Architects were LaFave, LaFave and Fair, Columbia, S. C., with Walter F. Petty as associate. R. S. Johnson was architect-engineer for design of framework, columns and beams. General Construction Co., Columbia, S. C., was general contractor, with E. S. Rabon as superintendent and W. F. Douglas as engineer.

New wood preservative development announced

Development of a new chemical wood preservative—copperized chromated zinc chloride—was announced recently to the American Wood Preservers Association.

Developed by a joint research program of Koppers Company, Inc., and E. I. du Pont de Nemours & Co., Inc., characteristics of the new preservative were described to the wood preservers at their meeting in St. Louis, Mo.

Tests revealed that apparently copperized CZC possesses greater permanence of its toxic constituents than CZC and that the metal corrosion factor and the glow characteristics of the two preservatives are about the same. The new preservative contains 73 percent zinc chloride, 20 percent sodium dichromate, and 7 percent cupric chloride.



HALF SECTIONS OF PRECAST TUBES

Specify New Circular Tubes for Texas Highway Tunnel

ANOTHER TUNNELING "FIRST" may be chalked up this summer: The Texas State Highway Department has specified a unique section for the prefabricated tubes that will make up the sub-aqueous portion of its Baytown (formerly Spillmans Island) Vehicular Tunnel under the Houston Ship Channel.

The tubes are circular, with a single steel skin lined with concrete. Although the more usual octagonal section with a steel shell enveloped in concrete is included as an alternate, the state and its consulting engineers—Parsons, Brinckerhoff, Hall & Macdonald of New York City—believe that the round section will prove cheaper when bids are opened.

The tunnel is part of a relocation of State Highway 146 between La Porte and Baytown, two heavily industrialized areas 20 mi. below Houston. The crossing will replace two ferry systems at Lynchburg and Morgans Point. Included in the 7½-mi. project are two grade separations (one of which will be a three-level structure, Texas' first), three trestles totaling 1,350 ft., 3¼-mi. of highway on hydraulic embankment, and the tunnel.

The tunnel will be 3,009 ft. between portals, with 500 ft. of open ramp beyond each end. Construction will be of two types: 2,557 ft. of precast tubes sunk in a dredged trench; 452 ft. of cut-and-cover portal segments built in the dry.

Site conditions favor the precast tubes for the sub-aqueous crossing. The soil is predominantly a silty sand, but the deepest 2,000 ft. of tunnel, beneath the channel, will rest on Beaumont clay. In all, there will be nine precast tubes varying from 250 to 300 ft. long, with bottoms a maximum 91 ft. below mean low water.

Although alternate bids will be taken on circular (Type S) and octagonal (Type T) tubes for the sub-aqueous stretch, the interior cross-section of the tunnel will be the same for both shapes (see cut.) It will be 28 ft. 4 in. in diameter, with a 22-ft. reinforced concrete roadway having a vertical clearance of 14 ft. minimum and 19 ft. 8 in. maximum. A service walkway will run along one side. A single large ventilation duct beneath the roadway will distribute fresh air through the tunnel curbs from a blower building located at the north portal. Control of the ventilation system will be automatic and will include continuous air-sampling and recording devices. Tunnel illumination will be by a single line of fixtures holding twin fluorescent lights.

Beyond the interior cross-section, the type S and Type T tunnels differ considerably. The skin of the circular tunnel will be of ½-in. steel plates forming a 34-ft. 10-in. dia. tube; that for the octagon will be ¾-in. plate with a 31½-ft. tube diameter. Both tubes will have a reinforced concrete circular shell lining, but only Type T will have concrete outside the steel. In the Type S tunnel, the center of the lining shell is displaced 6 in. above the center of the tube to give 2¾ ft. of cover at the crown and 3¾ ft. at the invert. The steel tube of Type T will be lined with a concentric shell of concrete 1 ft. 7 in. thick and will be enveloped in an octagonal concrete cover 35 ft. across flats.

Expect considerable economy

Naturally, the quantities of materials required for the two shapes vary. Circular Type S calls for 37,240 cu. yd of concrete (6,200 cu. yd., or 7½ percent, less than Type T), 677 tons of reinforcing steel (32 tons, or 4½ percent, less) and 4,282 tons of structural steel (856 tons, or 25 percent, more). The designers expect considerable economy during fabrication of the circular tunnel since, with concrete envelope eliminated, forms will be required only for lining.

It is planned to call for bids next month on the construction of the 2,557-ft. sub-aqueous portion of the tunnel. The job will require fabrication and launching of nine tubes (temporarily sealed by watertight bulkheads), placing reinforced concrete lining and roadway, excavation of the trench, sinking the tubes and coupling them underwater, completing the interior, and backfilling the trench. The work will also include 1,175,000 cu. yd of hydraulic embankment for the highway, built of spoil from the tunnel trench. Later contracts will cover the construction of the open-cut portal sections and connecting them with the tubes. The total estimated cost is in excess of $10,000,000.

The New York engineering firm of Parsons, Brinckerhoff, Hall & Macdonald are designing the tunnel and will supervise its construction for the Texas State Highway Department. Al Bahn, Jr., is resident engineer in the consultant's Houston office. The Highway Department itself is preparing plans for the other features of the relocation, under Jim Douglas, district engineer at Houston. D. C. Greer is state highway engineer.

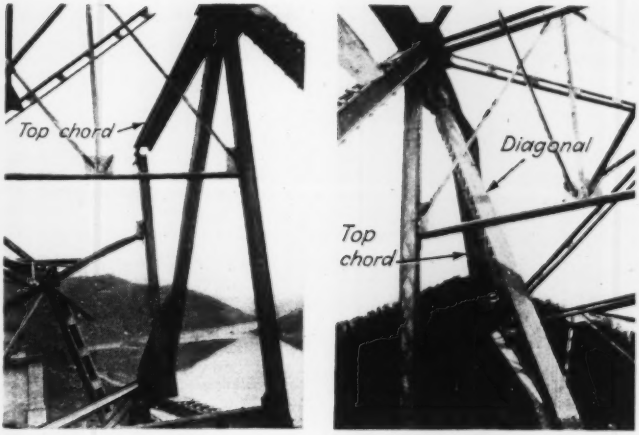
Bluestone River bridge failure still unsolved

No additional information on the Bluestone River bridge failure has yet been made available since the collapse of nine panels (208 ft.) of its 278-ft. central span was first reported in these pages (ENR April 7, p. 15 and April 21, p. 12).

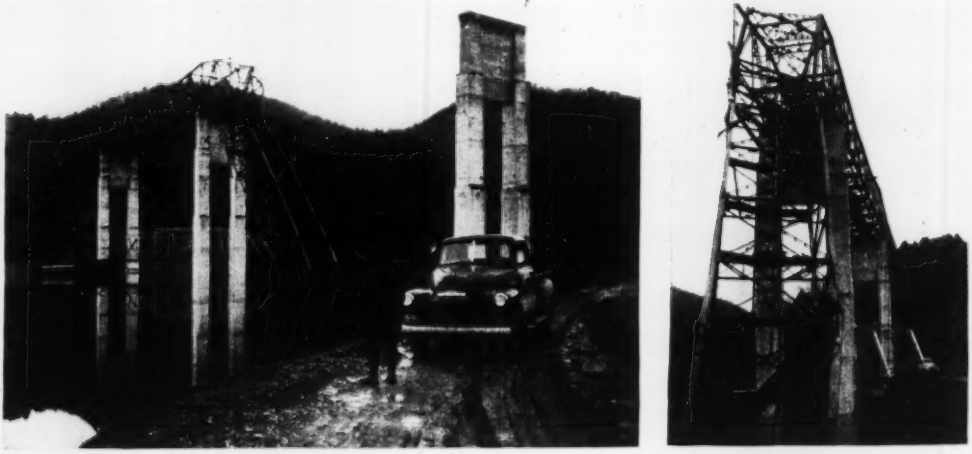
The accompanying photos, however, indicate to some degree the terrific structural damage suffered by the span as its outer end dropped about 140 ft. into the river.

No undue loads were superimposed on the structure and wind was light at the time failure occurred. The guy derrick was in motion, hoisting a steel erection truss.

The bridge is being built to replace a lower crossing that now carries state route 20 over the river above the site of Bluestone Dam. Virginia Bridge Co. holds the contract for the superstructure.

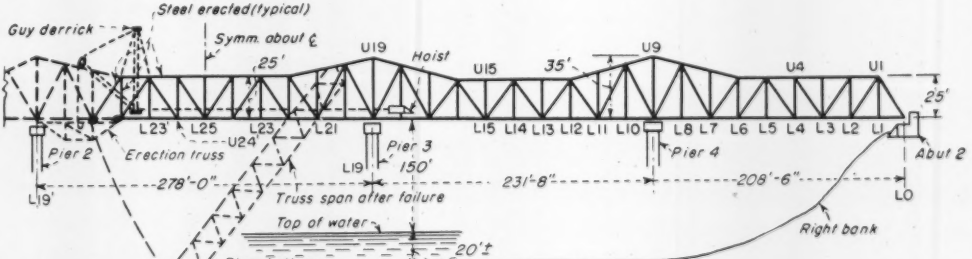


FROM ALL REPORTS, failure occurred either by complete rupturing of the downstream top chord at the second panel point of the cantilever (at right), or by buckling of the second panel of upstream bottom chord. The upstream top chord bent about the first panel point, without rupturing (at left).



AT THE TIME OF FAILURE, a light-weight guy derrick operating on the floor steel near the end of the cantilever had picked up a three-panel inverted erection truss to make a closure between the end of the downstream cantilevered truss and the next pier.

FLOORBEAMS were bent in increasing amounts as they suffered progressive impact from additional weights of floor steel.



ELEVATION VIEW of structure shows where failure occurred. Dotted line at left is course of span's fall.

How Arc Welding Simplifies Beam-To-Column Connections

MODERN welded buildings are being erected in less time and at lower cost with arc welding. Structural members are designed to permit fast shop fabrication wherever possible. For erection, columns, girders and beams are aligned, bolted, guyed and then arc welded with Lincoln "Fleetweld 5" electrodes using Lincoln Engine Driven "Shield-Arc" DC welders. The following examples of beam-to-column framing are typical of structural connections being used on multiple story buildings in various parts of the country and are discussed in detail in a new series of Structural Studies, available from The Lincoln Electric Company.

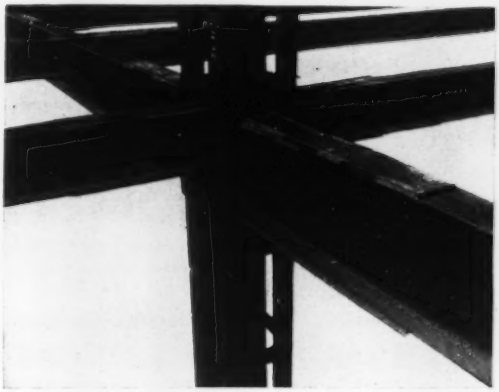


Fig. 1. Main girders, supported on cross channel plates, run directly through main columns. Four column angle sections shown are for temporary support during erection and later serve for composite steel and concrete columns. This construction is used on a Los Angeles Bell Telephone Building extension.

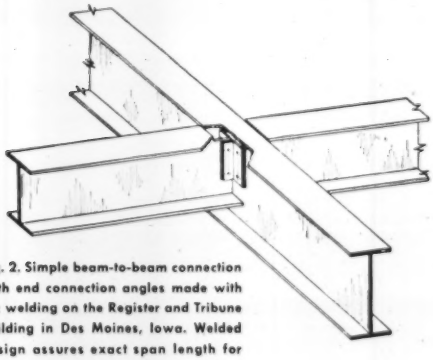


Fig. 2. Simple beam-to-beam connection with end connection angles made with arc welding on the Register and Tribune Building in Des Moines, Iowa. Welded design assures exact span length for beams and exact spacing of main girders.

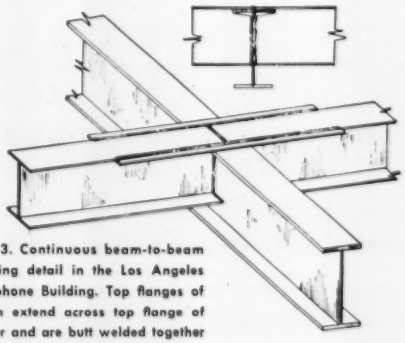


Fig. 3. Continuous beam-to-beam framing detail in the Los Angeles Telephone Building. Top flanges of beam extend across top flange of girder and are butt welded together on center line of girder.

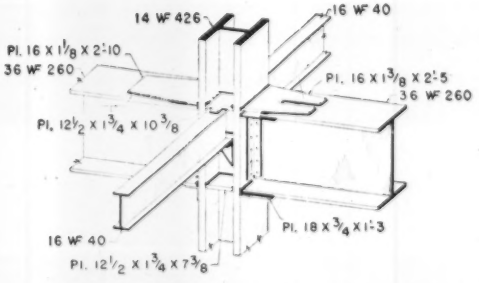


Fig. 4. Framing details at third floor level of ten story addition to Register and Tribune Building. All holes are eliminated from main columns by fillet welding or plug welding erection brackets to web and erection angles to column flanges.

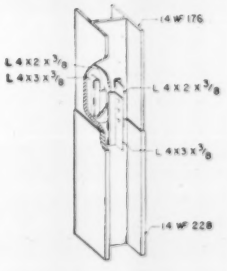


Fig. 5. Column splice at third floor level uses splice angles shop-welded to column webs. During erection, angles serve to hold columns in alignment while field-welding. Column ends are milled square in the shop and edges bevelled for simpler field-welding.

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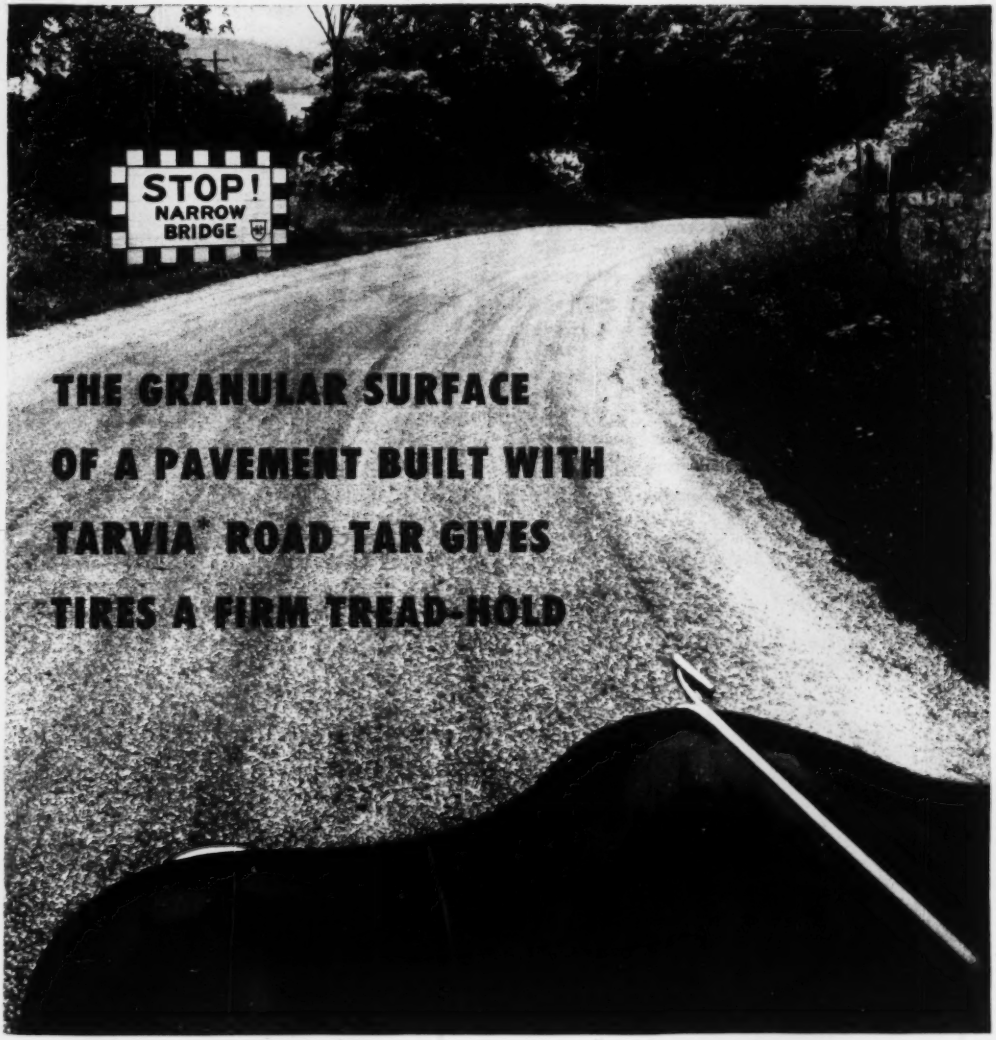

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DEVELOPMENTS ABROAD

ECA DOLLARS ARE AT WORK. Here, high in the mountains of Austria, and throughout all western Europe, U. S.-made machines are in the hands of engineers, craftsmen and laborers, building for a balanced economy.

Counterpart funds, "double-action" dollars, are at work in all corners of western Europe. Construction projects are being paid for by the francs, drachmas and lire which European farmers and workers pay for Marshall Plan tractors and tools.

These are big construction jobs. A quick survey of results of U. S. spending abroad, conducted by the McGraw-Hill World News Service, shows: Large dams started for much needed hydro power, bombed-out transport systems rebuilt, neglected farm lands reclaimed.

France—After the war, French railroads were graveyards of torn-up tracks, charred depots and twisted steel. Bombs destroyed more than 28,000 miles of railway lines and more than 100 stations. Eighty-five percent of France's steam locomotives, 35 percent of the electric engines, 64 percent of the freight cars and nearly all of the passenger cars were either blown up or taken by the Germans.

Today, the railroads have resumed prewar operation and, in many places, have improved their service.

With the approval of ECA and the French government, about $85,000,000 was released from the counterpart fund during the past year for the modernization of railroads. Of this amount, nearly half was earmarked for the purchase of rolling stock, as much for the electrification of the Paris-Lyon line, and the rest for various repairs and improvements.

Actually, the railroad reconstruction program is being accomplished with francs which came out of Frenchmen's pockets for goods received under the Marshall Plan.

In all, counterpart funds released to date in France total near $800 million.

Italy—Six additional land reclamation projects to be developed at a cost of $3,906,000 from Italian counterpart funds have been approved by ECA.

The projects will provide immediate employment for more than 5,800 workers and will improve hundreds of thousands of acres through irrigation, flood control and swamp drainage.

All the projects are in southern Italy—two in the Sibari area and one each in the Neto River Valley, the Metaponto region, the Bradano River area and the Burano Lake area.

More than one-third of the total expenditure has been authorized for the Metaponto region on the Ionian Sea. Work here involves land drainage along the coast and construction of a dam to furnish water for irrigation.

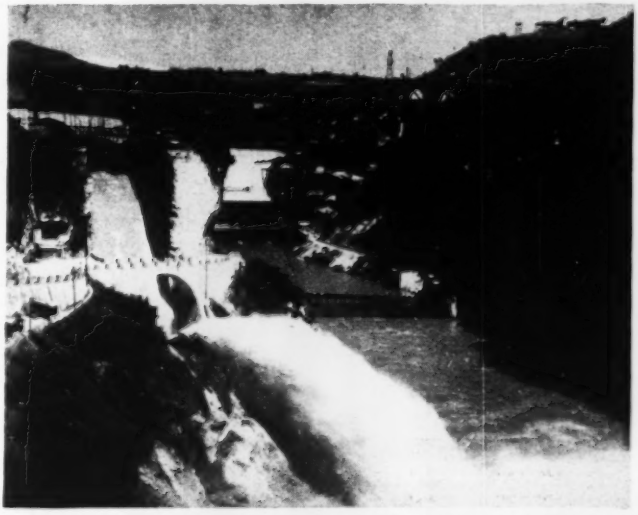
Thus far, about $21,600,000 have been authorized from Italian counterpart funds for agricultural improvement.

Dollars granted by the ECA have provided Italians with food, raw materials, and industrial items necessary to recovery, but the dollar grants have provided no "gifts" to the Italian consumer.

Technical Assistance

Electric power experts of nine European nations receiving Marshall Plan aid recently arrived in New York to study U. S. power systems.

Twenty-five members debarked from



GENISSIAT DAM WAS FINISHED in March, 1948, just before Marshall Plan funds became available. Some ECA dollars have since been spent here on additional equipment, but the bulk of the $11,000,000 spent on Rhone works in 1948 went to the Donzere-Mondragon project, which is in an early construction stage. Altogether there are 50 hydro projects under way in the country. (Wide World Photo)

the Queen Elizabeth and entrained promptly for Pittsburgh. After a week in that area the group was scheduled to visit power systems and electric equipment plants in New York, Milwaukee, Chicago, Buffalo, Philadelphia and the Tennessee Valley.

Objective of the mission, sponsored by the Economic Cooperation Administration, is to study American operating techniques. Power shortages in western Europe, ECA officials report, are retarding production and hampering the European recovery program.

Though representatives of several European countries have visited this country on specific ECA missions, the power group is the first representing a single industry in all western European nations. The group includes top engineers from France, Belgium, Luxembourg, The Netherlands, Austria, Italy, western Germany, Switzerland and the United Kingdom.

Also, two Greek government engineers recently arrived in Washington to begin a two months' study of United States reclamation projects. They were received by Paul G. Hoffman, Economic Cooperation Administrator, and Michael W. Straus, Commissioner, Bureau of Reclamation.

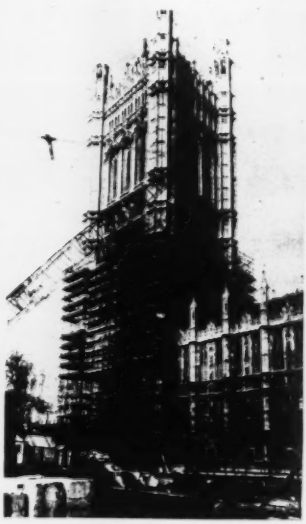
The two engineers, brought to this country under ECA's technical assistance program, will have a thirty day stay in Denver, then spend the remainder of their time in the U. S. touring reclamation projects in the western states.

Traveling and living expenses of the engineers are paid by ECA, and the Department of Interior will be reimbursed by ECA for services rendered by the Bureau of Reclamation.

ECA's technical assistance program has gained impetus steadily during the first year of the European Recovery Program. More than 200 requests from European countries for information on U. S. methods and techniques have already been received. Technical assistance may be furnished by sending expert consultants from the U. S. to Europe; by bringing European observers to this country; by an exchange of experts between participating countries; and by the distribution of technical literature.

In addition to those visitors mentioned above, there are teams of observers touring the United States from Denmark, the United Kingdom, Italy and Sweden at present.

130-TON TRUCK—The monstrous vehicle, parked alongside the 4-hp. Renault for contrast, has 28 wheels and weighs 75 tons. Its 220-hp. engine has 12 forward speeds and four in reverse. It is 86½ ft. long, 13 ft. high and 15 ft. wide. French manufacturers built it for export to Portugal. (Wide World Photo)



VICTORIA TOWER of the Houses of Parliament in London is under repair. Enmeshed in tubular steel scaffolding, the tower stands 336 ft. high and is 75 ft. square. In foreground a new boiler house for the building is under construction. (British Combine Photo)

Financing Outside ECA

A report issued recently on 15 years of operation by the Export-Import Bank, showed how bank funds are being used to foster foreign trade by construction of facilities for production, as well as outright money grants for other purposes.

The bank said that in its 15 years of operation it has authorized credits aggregating $4.2 billion. At the end of 1948 it had $967 million in uncommitted funds.

Careful not to infringe on operations of the Economic Cooperation Administration (the Marshall Plan) in Europe, the bank authorized only one loan—for $10,000,000—to Finland during the year. Most of the bank's new credits were for projects in the Latin American Republics and for the development of iron ore deposits in Canada.

Colombia—A credit for $3,000,000 to build the Hotel San Diego in Bogota has been approved by the Export-Import Bank. Estimated cost of the hotel—a modern 400-room structure—runs close to $6,400,000. Colombian participants will furnish the capital for local expenditures; the Export-Import Bank credit is to take care of dollar requirements, materials, services, and furnishings from U. S. sources.

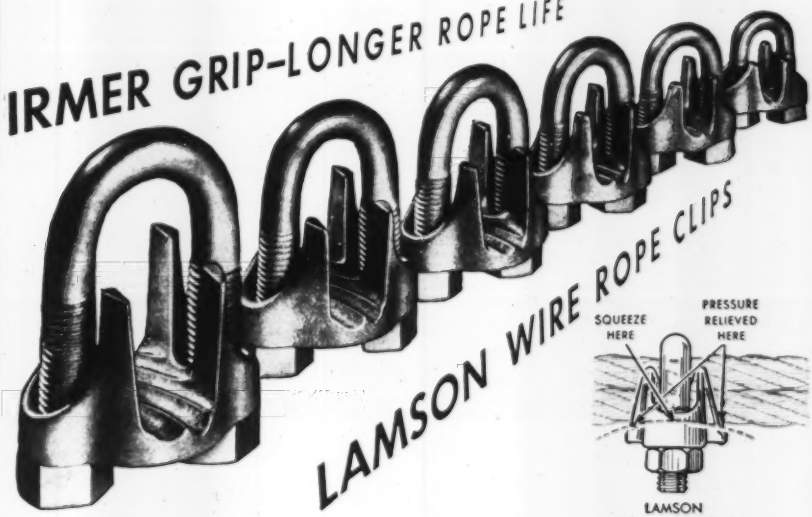
Intercontinental Hotels Corp., a New York hotel managing concern—and a wholly owned subsidiary of Pan American Airways—acts as U. S. agent for Hotel San Diego.

The Export-Import Bank several years ago earmarked $25,000,000 to assist in financing a chain of modern hotels—sponsored by the Intercontinental Hotels Corp., in key cities of Central and South America. The first is already under construction at Caracas, Venezuela. Other projects now under consideration are expected to mature as local interest develops in selected cities.

Egypt—A mission of the International Bank for Reconstruction and Development (the World Bank) has arrived to study development plans at the request of the Egyptian government. During three to four weeks in Egypt, the three-man mission will investigate in particular a proposed project to furnish year-round irrigation for 250,000 acres about 300 miles south of Cairo. J. R. De Fargues, a French Hydroelectric and irrigation engineer, is the technical consultant.

RAISED IN THE SADDLE!

FIRMER GRIP—LONGER ROPE LIFE



LAMSON WIRE ROPE CLIPS

LAMSON "RAISED SADDLE" DESIGN

LAMSON "Bull Dog" Wire Rope Clips perform like champions when "the squeeze is on". The secret of their efficiency lies in the exclusive "Raised Saddle" design which distributes the holding pressure along the center portion of the rope "seat". The edges of the saddle are rounded downward—thus eliminating the rope-wearing "pinch" and chafing of conventional clips.

The drawing above graphically illustrates the superiority of the Lamson "Raised Saddle" design. Note these outstanding and exclusive features:

1. Saddle curves downward at edges thus relieving pressure and "pinch" on wire rope . . . particularly when rope enters clip at an angle.
2. Clip is thicker, and therefore stronger, at central, raised portion of the rope seat. This allows for greater tightening of the clip and a consequent stronger no-slip grip.
3. "U" bolt nuts will not tend to loosen up with use as with ordinary clips.

For the sake of safety, economy and efficiency, specify Lamson "Bull Dog" Wire Rope Clips.

THE LAMSON & SESSIONS COMPANY

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Lamson & Sessions

"One Dependable Source for All Fastener Needs"

SEMS	LOCK NUTS	NUTS	STUDS
STOVE BOLTS	LAG BOLTS	WASHERS	RIVETS
TAPPING SCREWS	ROPE CLIPS	SET SCREWS	PLOW BOLTS
"1035" CAP SCREWS	MACHINE BOLTS	CARRIAGE BOLTS	COTTER PINS

—CUT ALONG THIS LINE—

WANT MORE INFORMATION on any of these fasteners? **CHECK**—and **CLIP** this strip.

LAMSON LOCK NUTS: Economical, vibration-proof. Can be re-used repeatedly.

"1035" SET SCREWS: Cup point type, hardened, heat-treated.

COTTER PINS: Steel, Brass, Aluminum and Stainless Steel.

SPECIAL NUTS: Cone, Barrel, Oblong, Plier, Tri-Slot, Half-round, etc.

PHILLIPS AND CLUTCH HEAD: Machine Screws and Tapping Screws.

MILLED STUDS: Concentric, accurate, in a full range of sizes.

"BENT" BOLTS: Including U Bolts, Eye Bolts, Hook Bolts, etc.

WEATHER-TIGHT BOLTS: Eliminate counter-boring in wood assemblies.

PIPE PLUGS: Forged Steel, heat-treated.

The Lamson & Sessions Company
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Long Life—Toncan is an ALLOY Iron . . . contains twice as much copper as copper-bearing iron or steel, *plus* molybdenum . . . resists rust and the corrosive action of soil, water, sewage. Assures lowest cost per year of service.

High Strength—Toncan Iron Drainage Products safely carry tremendous loads. Their resiliency prevents cracking or crumbling—resists vibration, impact, severe weather changes, settling earth, other dangers.

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"Toncan" Copper Molybdenum Iron is available in:

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*Reg. U. S. Pat. Off.

MUNICIPAL AFFAIRS

EAST SIDE APARTMENT COMMUNITY for New York City is the $12,000,000 Sutton Terrace. To be built at York Ave. and E. 62 St., it will house 500 families in three buildings—two 12 and one 13-story. Garden area fronting the structures will cover a subterranean, four-level, 300-car garage. H. I. Feldman is the architect.

Robot Traffic Court— A parking meter firm now has developed a machine that will collect the penalty indicated on a traffic ticket. The firm expects to have it on the market soon. You put the ticket in the device, with the required money for the fine, and the machine hands out a receipt.

Urban Development

An urban development bill, designed to clear Ohio cities of slums and blighted areas and make them available for rebuilding to conform with a general plan, has been recommended by the Ohio House of Representatives taxation committee.

City planning commissions, under the proposed bill, would redevelop the districts for industrial, commercial and housing uses and for recognized public services. The measure would grant power to cities to acquire land; give them the right to levy taxes and issued bonds, if approved by 55 per cent of the voters; levy special assessments on benefited property; get the right to receive federal grants; and require cities to sell such cleared land at its new redevelopment value.

Before a city council could move on development, a comprehensive city plan must have been adopted by a planning commission; a plan for redevelopment must have been approved by the commission; council must have adopted a redevelopment plan for a specific area.

Along the same line of urban planning voters of San Diego, Calif., have rejected a proposal to group all future public buildings along Cedar Street, which extends from the present city and county administration building. The vote was of an advisory nature and did not involve bond issues for the structures proposed or for the acquiring of sites.

The proposed buildings were a $5,000,000 hall of justice and a $2,000,000 main library. A state office building and a school administration building are two other structures for which financing has been arranged and which also would have been built on Cedar Street. It is believed the voters' action will result in future public buildings being erected on scattered sites.

In the Pacific Northwest, construction of a tunnel under the Columbia River, connecting Portland, Ore., and Vancouver, Wash., instead of a proposed new bridge, has been suggested by a group of Vancouver civic leaders. According to Vancouver City Commissioner George Hutton, the tube would cost less to construct and to operate.

The proposed tunnel would be a half-mile down stream from the present interstate bridge and would connect industrial areas of the two cities. Plans include construction of a dike along the north bank of the Columbia as far north as Woodland, Wash., with a road atop the dike leading to the tunnel.

A proposal for a second interstate bridge to relieve traffic on the present span was recently placed before the Oregon highway commission by Vancouver interests.

The City Plan Commission of Toledo, Ohio, meanwhile adopted a new policy on setbacks on streets or highways where improvements are planned. The city has been granting waivers to builders who did not wish to observe the prospective building lines; the city accepted some possibility of future liability if the new buildings had to be remodeled to fit the building lines when the improvements actually were put into effect.

Now, a new waiver form has been adopted, providing that builders accept the responsibility of clearing areas encroached upon under waivers. In addition to shifting the legal basis to conform to statutory authority, it shifts the practical application by placing on the owner the burden of removing the structure beyond the setback line and absolves the city from any claim for damages. This is in place of a fixed monetary figure establishing the limit of the owner's claim for compensation, should the city acquire the property.

The San Francisco Chamber of Commerce has a 1949 program of development for that city which includes these objectives: A twin bridge across the bay; economic housing for those who need it most; overall traffic and transit plan; port promotion and world trade center; revival of coast shipbuilding industry; a wholesale produce market; control union air terminal and a greater airport; and the development of Hawaiian and Alaskan trade.

Contractor Relations

The Seattle, Wash., city council has approved the recommendation of City Engineer R. W. Finke that installation of street lighting improvements, estimated to cost more than $3,000,000, be handled by city crews rather than under contract.

Finke told the council that complications involved in letting the work out to contract were so great as to make that method impractical. Existing poles are used to a great extent and that means coordinating the work with other utilities, which is difficult under contract.

W. S. Hill, electrical engineer, will head a unit in the engineering department to supervise the 3-year project. The city will save money by buying the material and doing the job itself, Finke said.

And at Youngstown, Ohio, city council is considering an ordinance providing for licensing building contractors and others, and preventing any persons from constructing, moving, wrecking, repairing, or making other changes in structures, including his own home, without first obtaining a building contractor's license. The bill is sponsored by the Building Association of Mahoning Valley, and excepts those persons who build or repair specifically for their own occupancy. Applicants for licenses would be required to pass an examination and pay a $25 fee for their permit.

AT VALVE OPENING—When a valve was turned at the Orinda filter plant, recently, 50 mgd. of water were added to the East Bay Municipal Utility District's system which serves nine California cities. Several of the engineering personnel responsible for the project present were: l. to r.: E. L. Macdonald, manager, Mokelumne division; Otto C. Bohl, resident engineer; R. C. Kennedy, assistant chief engineer; H. A. Knudsen, mechanical and electrical division manager; Paul Nichols, senior civil engineer; and J. S. Longwell, who is chief engineer and general manager of the project.

Waterworks and Sewers

Extensive waterworks and sewerage expansion projects are now under way in three important cities—Winston-Salem, N. C., Indianapolis, Ind., and Jacksonville, Fla.

The city council at Winston-Salem, on April 27 let contracts totaling $3,521,912 for expanding its water system, including extending lines to a new source of supply on the Yadkin River. The work includes extensive enlargement of the Salem filter plant, the construction of a pumping station on the Yadkin River, and additional distribution lines inside the city.

The largest contract went to Blythe Brothers of Charlotte, N. C., for the construction of a 36-in. concrete pipe line to the Yadkin for $1,534,627. The firm also will build a 48-in. steel pipe line from the Salem filter plant to the city reservoir for $296,365.

Other contracts included: V. B. Higgins Co., Greensboro, N. C., pumping station on Yadkin River, $129,490; structural work at Salem filter plant, $837,940; mechanical work at filter plant, $348,730; Chicago Bridge and Iron Co., Atlanta, Ga., standpipe on Yadkin River line, $74,000; N. E. Brewer and Co., of Winston-Salem, pipe line from filter plant to city, $241,043.

The $4,000,000 sewer construction program of Indianapolis is under way after more than a year of delay caused by a state law error and shortage of municipal engineering help.

City Engineer M. G. Johnson announced private engineering firms are preparing plans for half the project and will submit bids June 23. He hopes to complete the work this year.

Largest of the four general developments is on East 34th Street, with an estimated cost of $1,200,000. Plans to be submitted by city engineers soon to the Board of Works call for a sewer 13 feet in diameter under 34th Street, while a 6-ft. companion sewer costing approximately $800,000 will run along 37th Street from Fall Creek east to the city limits. There are also three other smaller sewer projects planned.

The city waterworks of Jacksonville soon will be spending $5,000,000 expanding and improving its waterworks system. Over the years, extensions have been continually made in the east iron distribution system. From the original seven miles of pipe, the total today is 224 miles. Under the new improvement program, additional miles will be laid. The estimate calls for 48.6 miles of new pipe and 14 miles from pipe salvaged from lines being increased in size.

Among other principal improvements provided for is a pumping station in the Lake Shore area, four additional reservoirs, three new buildings, and three additions to present buildings. To go with these will be a new well collector header, pumps and controls, aerators, chlorinators and master meters.

Activity in other cities

The planned water and sewer expansion program of the city of Albuquerque, N. M., has hit another snag as two of the city's five commissioners refused to vote for a supplemental ordinance to clarify some points of a $2,910,000 revenue bond issue, apparently preventing final sale of the issue. The proposed program has been a bone of contention between the two factions of the city's commission since it was recommended last August by Hasie and Green, Lubbock, Tex., engineering firm, which in a master report recommended expenditures of $10,000,000 over a 10-year period for the city's water and sewer systems. It recommended financing the first approximately $3,000,000 of work with a revenue bond issue, the remainder with general obligation bonds.

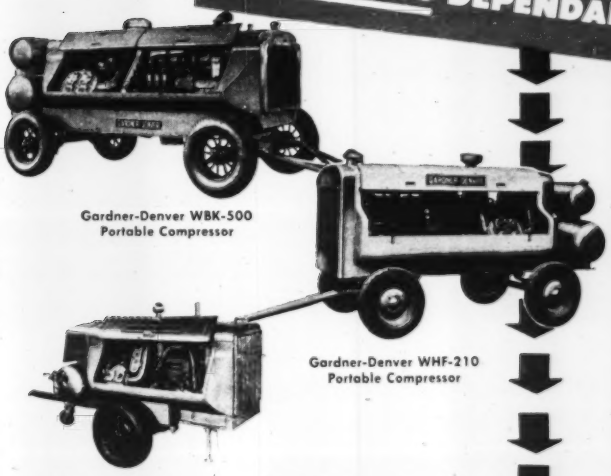
Construction of sewers, water mains, pavement and other street improvements which last year set a 20-year record in Fargo, N. D., will be exceeded in 1949, if recommendations of W. P. Tarbell, city engineer, are approved by the city commission.

Slum Clearance Programs

New York municipalities eager to clear their slums got a helping hand from the state last week when Gov. Thomas E. Dewey signed a new redevelopment law. The measure permits the lease or sale of municipally-owned or acquired slum property to private individuals for purposes other than urban redevelopment housing projects. Such property may now be sold or leased for periods up to 99 years, for uses "consistent with provisions set by local governing bodies," and approved by local planning commissions.

The new law contrasts with the 1942 Redevelopment Companies Law which restricted the use of city-acquired slum property to housing developments only.

AN ALWAYS DEPENDABLE AIR SUPPLY . . .



Gardner-Denver WBK-500 Portable Compressor

Gardner-Denver WHF-210 Portable Compressor

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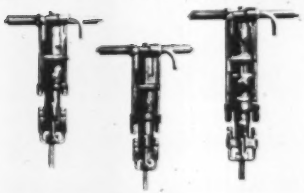
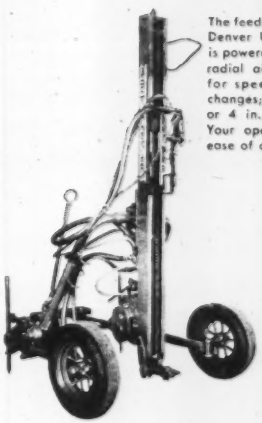
No matter where you send a Gardner-Denver Portable Compressor, you can be sure of a steady, uninterrupted air supply. For regardless of climate or altitude, the complete water jacketing of all cylinders "weather-conditions" them against over-heating — and from cold, unlubricated starts in sub-zero weather. For complete information, write Gardner-Denver Company, Quincy, Ill.

. . . FOR THE RIGHT AIR TOOLS



There's a Gardner-Denver Sinker that's "correct" in size and power for every type of ground. Shown here are the three most popular models: the high-speed S45 for secondary drilling or medium rock—the S55, most popular 55-pound sinker on the market—the S73, 67 pounds of speed and power for deep holes or the hardest formations.

Powerful Gardner-Denver B87 Paving Breaker has exclusive throttle safety latch — can be easily moved around the job without shutting off the air. Easily converted to a sheeting driver.



The feed of the new Gardner-Denver URM99 Wagon Drill is powered by a five-cylinder radial air motor. Designed for speedy, six-foot steel changes; carries a 3½ in. or 4 in. bore derrick drill. Your operator will like the ease of control.

The Gardner-Denver T23 Backfill Tamper is balanced for easy "walking" over the fill — has valve and exhaust that won't "freeze" in cold, damp weather — contains integral oil reservoir that assures complete lubrication.

Gardner-Denver Model 28 Clay Digger makes digging easy in clay or hardpan—can also be equipped with axe blade for trimming or cutting timber, or with moil point or chisel for light demolition work.

GARDNER-DENVER SINCE 1859

IT TAKES A BAKER FOR THE MAN SIZE JOBS

It is significant that today on the BIG TOUGH JOBS you'll find Baker Bulldozers and the A-C HD-19 in the key spots . . . where the going is toughest, where big yardages must be moved fast and at lowest cost.

And it's not the color of the paint that makes Baker the favorite — it's the reputation they've been building up among experienced users — for out-dozing anything in the field — for more yardage per pass — for easier operation — for rugged dependability.

These are facts that can be proved in the field, on your job. If you are still using your regular bulldozers, it will pay you to investigate this great, new Baker. See your friendly Baker Allis-Chalmers dealer today.

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ENGINEERING SCHOOLS

Personality Survey

Intelligence is the most highly sought after personal quality in an engineering employee. This is the opinion of 44 of the nation's top-level engineering executives, who participated in a survey recently concluded by the Engineers' Council for Professional Development. This survey was to provide facts about human personality which would be valuable in its program of student and professional development.

The results of the three-year survey, including opinions of college administrators, faculty, personnel officials, and engineering students, are published in a 25 page-booklet, "The Most Desirable Personal Characteristics," in which the data submitted by 1033 respondents are plotted in 15 bar charts and curves, and interpreted by the ECPD Subcommittee on Student Development.

Asked to list six carefully selected positive characteristics of human personality in the order of the most desirable, 80 percent of the executives gave first or second place to intelligence. Physical acceptability, defined as masculinity, good carriage, cleanliness, etc., was rated as least important, with 93 percent of the respondents giving this characteristic fifth or sixth place. Dependability was rated second among the most desirable characteristics; organizational acceptability third; energy fourth; and emotional acceptability fifth.

In general there was good agreement on what the main characteristics mean. For all those replying the intelligent man was, first, one who was clear thinking and, last, one who was shrewd. The dependable person was one who was truthful and not necessarily one who could get things done. Cooperativeness and consideration were rated the most important qualities of the organizationally acceptable man. But when it came to the term, dynamic, divergence of choices indicated that no one was sure just what the term really meant.

Copies of the report may be obtained from ECPD, 29 West 39th Street, New York 18, N. Y. Price per copy is 25 cents.

Hydraulics Conference

As in each of the previous triennial meetings held by the Iowa Institute of Hydraulic Research at the State University of Iowa, Iowa City, the technical sessions of the fourth hydraulics conference, June 12-15, will reflect a particular and timely theme. The institute has invited leaders in the major subdivisions of the science to prepare papers which will form the consecutive chapters of a book on "Engineering Hydraulics." These chapters have been carefully correlated by the institute staff, and are now being preprinted by photo-offset from galley proof for thorough discussion at the conference prior to final revision and publication. The chapters and their authors are as follows: Fundamental Principles, Hunter Rouse, University of Iowa; Hydraulic Similitude, J. E. Warnock, Bureau of Reclamation; Flow Measurement, J. W. Howe, University of Iowa; Hydrology, G. R. Williams, Knappen Tippetts Abbett; Flow of Ground Water, C. E. Jacob, University of Utah; Steady Flow in Pipes, V. L. Streeter, Ill. Inst. of Technology; Surges and Waterhammer, J. S. McNown, University of Iowa; Controls and Transitions, A. T. Ippen, Mass. Inst. of Technology; Gradually Varied Flow, C. J. Posey, University of Iowa; Flow Routing, B. R. Gilcrest, Corps of Engineers; Wave Motion, G. H. Keulegan, Bureau of Standards; Sediment Transportation, C. B. Brown, Soil Conservation Service; and Hydraulic Machinery, J. W. Dailey, Mass. Inst. of Technology.

Except for one general address by A. L. Alin, consulting engineer, on "Present-Day Trends in Hydraulic Engineering," the technical sessions will be devoted entirely to presentation and discussion of the preprinted chapters. Each discussion will be led by an engineer particularly familiar with the material in question, and extensive discussion from the floor will be encouraged. To this end chapter preprints will be mailed to all registrants in ample time for careful examination prior to the conference. A nominal registration fee of $2 will be charged, the price of this book to registrants wishing to purchase copies thereafter being reduced by this amount.

Faculty Items

Randolph P. Hoelscher, professor of general engineering drawing, University of Illinois, and director of engineering courses, Navy Pier branch, Chicago, has been made head of the general engineering department, to succeed Prof. H. H. Jordan, who will devote his entire time to his duties as associate dean.

Walter Stephenson Newman was inaugurated recently as tenth president of Virginia Polytechnic Institute, Blacksburg, Va.

SOUTH AMERICAN STUDENTS—A group of Latin American engineering students attending universities in the Washington, D. C., area meet in the office of Charles M. Upham, engineer-director, American Road Builders' Association, before visiting heads of Federal Works Agency and Public Roads Administration. Seated—left to right: Enrique Hill B, Mexico (Catholic University); Ricardo Arosemena, Panama, (Catholic University); Charles M. Upham, engineer-director, American Road Builders' Association; Alfredo Cofino C., Guatamala (Catholic University); Hernando Piaggio, Bolivia (University of Maryland); Rear—standing, left to right: Edwin Rivas—Cierra, El Salvador (Columbia Tech); Mario Smith, Cuba (Catholic University); Mario Marcio Fontanillao da Cunha, Brazil (University of Maryland); Francisco Aguirre, ARBA staff; and Jaime E. Mantilla, Colombia (Catholic University).

MEN AND JOBS

The former executive secretary of the Virginia State Water Control Board, **L. L. Hedgepeth**, has joined the American Cyanamid Co. as consulting engineer on industrial waste problems. He was appointed administrative officer of the Virginia board in 1946, a few months after the passage of the state's stream pollution abatement law. He will make his headquarters at Bound Brook, N. J.

New appointments in the Tennessee Highway Department include **Sam Squires**, who has been in the Chattanooga division of the Highway Department, as chief engineer, and **Parks Swaim**, who has been in the West Tennessee division, to head the new rural roads division. Regular division engineers will be: **J. B. Ramsey**, first division, Knoxville; **H. O. Boyd**, second division, Chattanooga; **John Love**, third division, Nashville, and **J. C. McCallen**, fourth division, Jackson. **R. C. Fergus** has been made assistant to Mr. Swaim. **Chester Cooper**, first; **E. L. Sandy**, second, **Charles Speight**, third, and **E. G. Joyner**, fourth, rural roads divisions.

G. F. Bond, an assistant engineer for the last 28 years in the New York State Department of Public Works, has retired. He attended Rensselaer Polytechnic Institute and before entering state service was with the Delaware and Hudson Railroad.

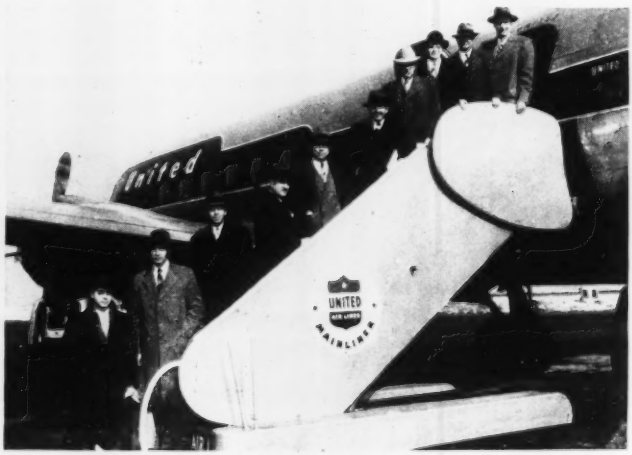
Horace B. Compton of the New York State Department of Public Works, who has been executive assistant to the chief engineer, has resigned to become principal personnel technician with the civil service department in charge of all engineering examinations. A former teacher of engineering subjects in Rensselaer Polytechnic Institute, he entered state service in 1945 after returning from 4 years as a lieutenant commander in the Navy's Civil Engineering Corps.

Leonard W. Trager of Concord, N. H., has been appointed Regional Drainage Engineer for New England. He will have offices at 120 Boylston

(Continued on page 39)

Details of the ozone diffusion chamber at Philadelphia's new taste and odor control plant are pointed out by **E. L. Bean**, principal assistant engineer, Bureau of Water.

Thomas Poulter, who will direct research on land sinking in Long Beach, Calif., where subsidence has caused serious structural failures.



A chartered United airliner was used to give engineers and public officials of Westchester, Nassau and Queens counties, N. Y., a view of a new drainage system at the Philadelphia Airport, as guests of the Universal Concrete Pipe Co. They saw the newly-installed rubber-coupled concrete pipe used to drain excess water from the runways. Left to right are Erick Andrews, chief engineer and assistant to the public works director, White Plains, N. Y.; Tom Ray, New Rochelle chief engineer; H. Sherman, chief engineer and assistant to public works director, Nassau County; Leo Kampf, chief engineer, Karl Vopel, engineer in charge of design, and Martin Nelson, chief engineer of design and construction of sewers, Borough of Queens; and William Raisch, consulting engineer of the borough president's office. Messrs. Leuliette, Keller and Monaghan of Universal are at extreme right.

W. B. Wolfendale, who directed construction of the $28,000,000 Ross Dam for Seattle, Wash., City Light, has retired after 31 years of service first with the city engineering department but principally with City Light. He started as a junior engineer on the construction of Diablo Dam. After completion of Diablo in 1930, he directed construction of bridges for City Light's Skagit Railway and pipelines at Cedar Falls. In 1936, he was appointed assistant resident engineer for Ross Dam, farther up the Skagit River from Diablo. When construction began in 1937, he was placed in charge as resident engineer. Under his direction, several innovations in dam construction were instituted, including the use of deflector hoods to control the water in the spillways, and large refrigeration machinery to cool the concrete.

You get better service wherever you see this sign

There's a *Macwhyte* Rope that's the *right* rope for your equipment. All job-proved — a thousand and one wire ropes to choose from.

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Brute Strength *and a "Delicate Touch"*

An **OLIVER** "Cletrac" **Plus Advantage**

Oliver "Cletrac" Model FDE equipped with shear dozer and tree pusher mounted on Drott Trailbuilder clearing right-of-way.

Clearing a right-of-way for power lines is a job that requires an ideal combination of brute strength and perfect control. The answer . . . OLIVER "Cletrac"!

This Model FDE equipped with a shear dozer and tree pusher mounted on a Drott Trailbuilder is the ideal unit for land clearing and grubbing. It removes only the minimum amount of top soil . . . yet it effectively clears the right-of-way.

The husky OLIVER "Cletrac" Model FDE provides plenty of rugged power for the toughest terrain. And the new OLIVER "Cletrac" air steering and braking system provides the perfect control so necessary for fast, efficient operation, *on level ground or steep slopes.* Add to this, the fact that there is always power on both tracks . . . *even on turns* . . . and it's easy to see why the OLIVER "Cletrac" combination of brute strength plus the light touch on the controls is the ideal unit for any job.

For all the facts, see your OLIVER Industrial Distributor or write to The OLIVER Corporation, Industrial Division, 19300 Euclid Avenue, Cleveland 17, Ohio.

Cletrac

a product of

The OLIVER Corporation

A complete line of Crawler and Industrial Wheel Tractors

"THE SIGN OF EXTRA SERVICE"

(Continued from page 36)

Street, Boston, and will develop a New England program for abatement of water pollution. He is a graduate of the University of Iowa and has been director of sanitary engineering for New Hampshire.

Howard F. Fetters has opened a consulting engineer office at 331 So. State St., Ann Arbor, Mich. A branch office in Port Huron continues under the direction of **Henry Lumsden.**

Ivor Strong has been appointed chief city engineer of Calgary, Alta., A graduate of the University of Saskatchewan, he formerly was engineer of Swift Current, Sask.

T. J. Kent Jr., associate professor of civic planning and head of the new department of civic planning at the University of California, has become a member of the Berkeley City Planning Commission, succeeding **George H. Senger**, resigned.

Benton County Commissioners at Prosser, Wash., have named **Cecil D. Kinder** county engineer following the death of **Roy Nunn.** Kinder was a lieutenant colonel in the Corps of Engineers during the war, with four years service in India. Otherwise, he has been Garfield County Engineer at Pomeroy, Wash., since 1939.

H. F. Angelberger, project superintendent for The Austin Co. on construction of additions to the Mead Corporation plant at Kingsport, Tenn., reports only 3 lost-time accidents occurred on this job in 158,210 man-hr. of work (averages 1 in 25.5 man-years), although as many as 200 men were employed.

Kinney Bituminous Distributors are engineered to provide dependable bitumen circulation for top performance on every road building job. The jacketed Rotating Plunger Pump, coupled directly to the underside of the tank has large passages, unrestricted by valves or springs, and is heated by hot engine exhaust. This plus the inside circulating line, circulating spray bars, and the special "Kero-Circ" solvent flushing system keep Kinney Distributors in tip-top condition—ready for instant starting and accurate application. Kinney welcomes the opportunity to quote on you requirements. Write for Bulletin A-48.

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OPERATING machinery for bridge installations, dams, locks and gates should be dependable and positive in action above all else. Earle "oversize" construction and automatic lubrication minimize wear and provide year after year service with little or no maintenance. Backed by years of experience, Earle produces operating machinery that is known as "trouble-free" by bridge and water works engineers who specify it.

Our specialists will gladly work with you to solve your gear or machinery problems—get in touch with us now. If you want further information first, send for our NEW catalog containing Earle operating machinery. The EARLE GEAR AND MACHINE CO., Main Office: 4717 Stenton Ave., Phila. 44, Pa.; Sales Offices: 149 Broadway, N. Y. 6; 901 Davis Ave., Pittsburgh 12, Pa.

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*More than a half-mile of steel-like reinforcement per square yard.

THE SISALKRAFT METHOD OF CURING CONCRETE IS "MADE-TO-ORDER" FOR YOU

The SISALKRAFT Method of curing concrete roads actually cuts curing costs as much as 50% . . . saves you time, labor and money. With reasonable care under normal job conditions, you can get 15 uses or more from genuine SISALKRAFT Curing Blankets. Use them this year and see for yourself!

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Robert S. Johnson has been appointed district engineer for the U. S. Public Roads Administration in the Philippine Islands. For the last 19 years he has served as district bridge engineer in the PRA office in Albany, N. Y. Mr. Johnson will direct the rehabilitation of war-damaged roads and bridges throughout the islands.

A. C. McCloskey, is regional supervising engineer at Toronto, Ont., for the Central Mortgage and Housing Corp., Ottawa, Ont.

John Perdue, formerly superintendent, Vancouver Construction Co. Ltd. Vancouver, B. C. has become supervisor of construction in the creation of houses, hospitals and schools for the Venezuelan Basic Economy Corporation at Caracas.

Clarence B. Shain, who opened an office as consulting engineer in Olympia, Wash., earlier this year after resigning as Washington State Highway Director, has been appointed city engineer at Pasco, Wash.

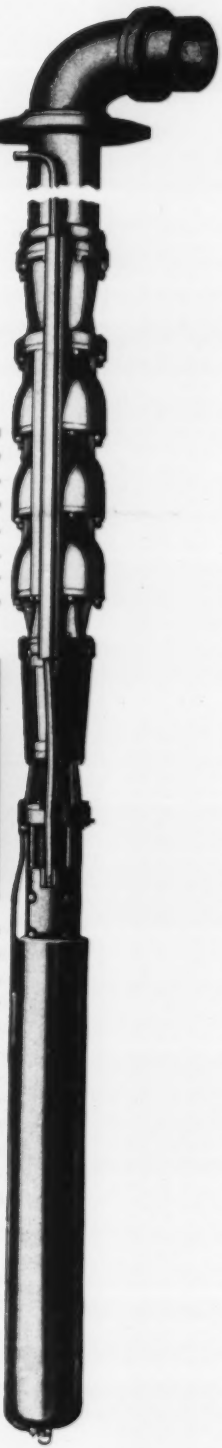
Commendations for achievement in accident prevention at the Fall River Dam, Kansas, project were presented recently by the Tulsa Army engineer district to Wilbur G. Watson and Carl I. Nelson, field superintendents of Arcole Midwest Corp., prime contractor. Holding the citations are: John R. Soderberg, Corps of Engineers resident engineer; Mr. Watson, Mr. Nelson and Raymond L. Brolyes, assistant resident engineer on the project.

The above officers were present when an affiliation agreement was signed recently for an Engineer Brigade unit co-sponsored by the Engineers Club of St. Louis, Mo., and the office of the division engineer, Upper Mississippi Valley division, Corps of Engineers. Standing: Col. Joseph E. Vollmar, commanding officer of the newly affiliated Engineer Brigade, Col. D. W. Heiman, assistant to the division engineer, Walter E. Bryan, secretary of the Engineers' Club of St. Louis. Seated, left to right: Col. F. H. Boucher, Missouri Senior Army instructor, Organized Reserves, Brice R. Smith, president of the Engineers' Club of St. Louis, and Col. Clark Kittrell, division engineer of the Corps of Engineers.

Mine protection starts *down deep*

a BJ *submersible*

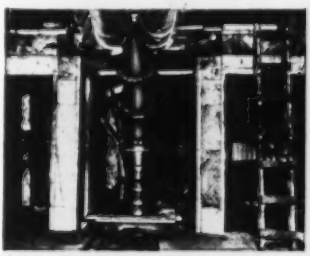
cannot be damaged by flooding

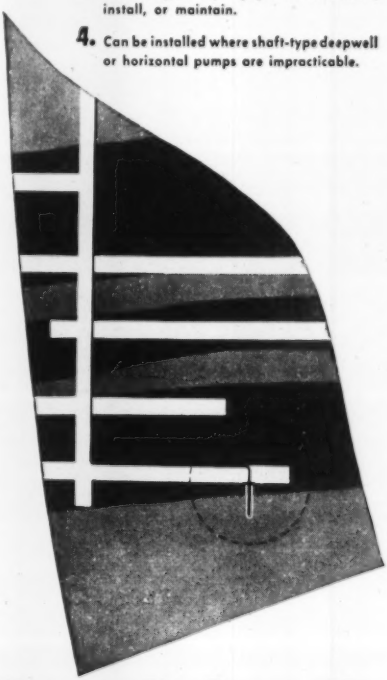


MORE AND MORE OPERATORS are installing Submersibles as the best pumping insurance against flood damage. The Submersible operates completely submerged in water because of the BJ close-coupled motor-pump design. Controls are out of reach of flood waters. There are no long line shafts with innumerable bearings to install and maintain. These are replaced by the marine power cable.

Here are 4 important BJ Submersible advantages:

1. Close-coupled motor pump unit operates completely submerged.
2. No danger from flooding or cascading water.
3. No heavy, bulky equipment to handle, install, or maintain.
4. Can be installed where shaft-type deepwell or horizontal pumps are impracticable.





THE COMPLETE PUMPING UNIT can be hung in the shaft, submerged in a collection sump, or placed at the best water pick-up point. Discharge can be to surface, to other mine levels, or to abandoned workings. The Submersible replaces other more complicated horizontal and standby booster pump stations. A single pump can lift up to 1500 feet or handle capacities up to 5000 gpm. Greater lifts and capacities can be provided by combining two or more Submersibles in the same mine shaft or on a single discharge line. Write us today for further details.

1. Pump and motor can be set at any desired depth from 50 to 1500 feet. Can be installed in a corner of the shaft. Requires very little space.

2. Pumping element is directly connected to motor. Number of stages governed by lift required.

3. Submersible motor, completely enclosed, has marine cable to surface. Available in sizes from 10 hp to 400 hp.

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"MUST IT RUST?" A three billion dollar question that is dramatically answered in our 16 mm sound motion picture. This educational film is one that interests both consumer and producer—and everyone who is concerned with the problems of rust and corrosion should see it.

A print of this film will be gladly loaned—

Regarding availability of this 25-minute sound film in 16 mm size, for showing to your personnel, or to any group in your community, write, The Secretary, American Hot Dip Galvanizers Association, Inc., First National Bank Building, Pittsburgh, Pa.

hot-dip GALVANIZING

OBITUARY

Edward Frederick Miller, TVA civil engineer, Knoxville, Tenn., died April 25 at the Fort Sanders Hospital. He had been with TVA for 14 years.

E. L. Pardue, 63, of the Nashville district, Corps of Engineers, died at Glasgow, Ky., April 27 as a result of a traffic accident. He was formerly Tennessee commissioner of institutions.

W. R. Smith, 60, retired engineer of Middlesex County, Ont., died at Goderich, Ont., April 28. He was a consultant of the Ontario Planning Department and hydraulic engineer of the Aux Sable Conservation Authority, and one of the early promoters of the Upper Thames Valley Authority.

John M. Olsen, 60, of Springfield, Mo., died April 30. A contractor in Springfield for 30 years, he constructed the Frisco expansion at Birmingham, Ala., the southwest Missouri Shrine Temple and a number of other large projects.

Will Carleton Caldwell, 63, LaGrange, Ill., died April 11. He was a graduate of the University of Illinois, 1911, in architectural engineering. He was a construction superintendent for Holabird & Root for many years, building examiner for Chicago, and for a number of years was employed by Frank A. Randall.

Walter S. Cook, 60, for the last 20 years a civil engineer with the department of highways of Ontario, died April 27 in Ottawa. He was graduated from Queens University in 1916.

Russell G. Swan, 61, engineer, died in Montreal, April 27. He was graduated from the University of Toronto in 1909 and ever since had specialized in hydraulic engineering. He was one of the engineers responsible for the basic hydraulics research which resulted in the successful development of hydroelectric power on many Quebec rivers.

Marshall John Clarke Andrews, 69, civil engineer for the Great Northern Railway, died April 24 at Tacoma, Wash. He surveyed the 8-mi. railroad tunnel through the Cascade Mountains in 1923 and also assisted in surveys for Grand Coulee Dam and facilities of the Bonneville Power Administration. Mr. Andrews was chief engineer on the Great Northern line from Wenatchee to Orondo in Eastern Washington and also was chief engineer on construction of the longest tunnel in America, located on the Great Northern line through the Cascades.

James Davis, 62, long-time assistant director of the Washington State Highway Department and often acting director, died April 26 at Olympia, Wash. A civil engineering graduate of Washington State College, he had been with the department for 27 years.

Charge monopoly in concrete block machinery

The Justice Department has recently filed an antitrust suit charging the Besser Manufacturing Co., Alpena, Mich., with monopolizing the concrete block machinery industry. Others named in the suit are the Stearns Manufacturing Co., Adrian, Mich., and three individuals: Jesse H. Besser, president of the Besser firm, and Louis Gelbman and Hamlin F. Andrus—the latter two located in Yonkers, N. Y.

After announcing in Washington that the suit had been filed in Federal Court at Detroit, Attorney General Tom C. Clark went on to say, "Vigorous enforcement of the antitrust laws with respect to all matters pertaining to housing will be continued. We are determined that the consumer shall have the benefit of the competitive prices and freedom of selection to which he is entitled."

The Justice Department in its suit charges the two companies and three individuals with conspiring to restrain and monopolize interstate trade and commerce in machinery for the production of concrete blocks. The complaint alleges that the Besser Manufacturing Co., the largest manufacturer of concrete block machinery in the United States, acquired various competing companies, engaged in restrictive agreements, and—through secret stock purchases—gained control over the Stearns Manufacturing Co., its chief competitor in the industry.

It also charges that the defendants conspired to eliminate the competition of other manufacturers of concrete block machines.

As a result of these practices, the complaint asserts that the Besser Manufacturing Co. has gained control of approximately 80 percent of the production and sale of concrete block machines.

The suit seeks to enjoin the defendants from continuing the various unlawful practices and arrangements charged.

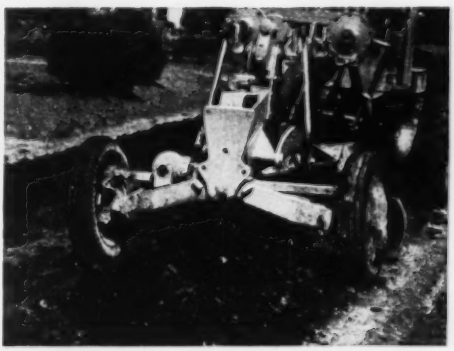
Ample Operating Clearances

Along with a wide range of blade adjustments—with ample operating clearances in all positions—Adams Motor Graders also provide generous clearances for maneuvering the blade into any desired position, quickly, easily, as illustrated above:

1. **Between Blade Ends and Tires:** Lots of room here for sharp blade angles—without tire interference, front or rear.
2. **Between Blade and Frame:** Plenty of space provided for free movement of the blade heel.
3. **Between Blade Assembly and Frame Arch:** More space for higher lift of the blade and better ground clearances.
4. **Between Blade and Scarifier Block:** Ample room for easy reversing of blade under scarifier block.

This is but a sample of the thoughtful engineering that goes into Adams Motor Graders—engineering that gives you the fastest, most efficient and economical grader operation you've ever known. Let your local Adams dealer give you complete details.

J. D. ADAMS MANUFACTURING COMPANY • INDIANAPOLIS, INDIANA



Adams high-arch front axle provides approximately twice the capacity of conventional axles for straddling large windrows of material. Bulldozing of axle through material is eliminated—no waste of power, no loss of operating speed.

Make your next motor grader an

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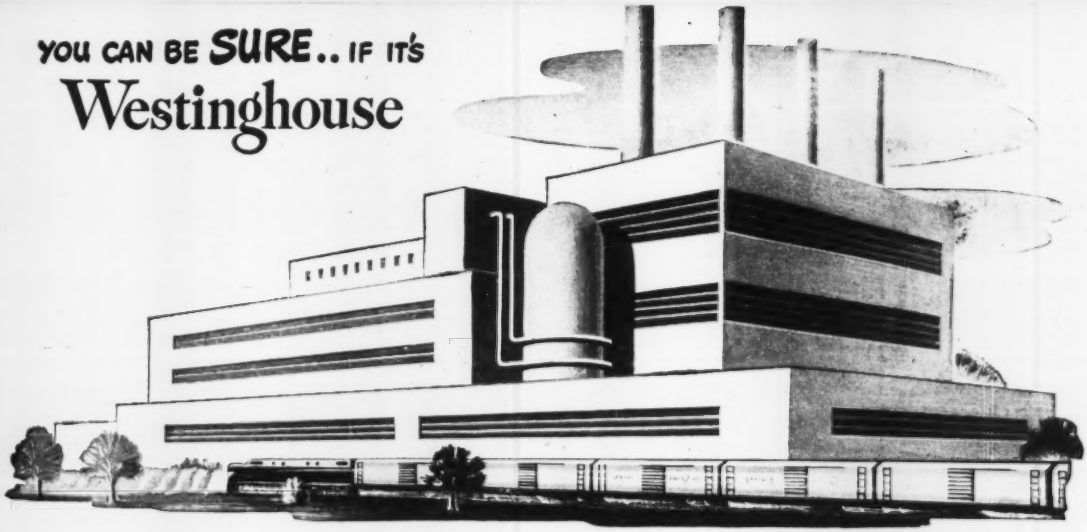
YOU CAN BE **SURE**.. IF IT'S

Westinghouse



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This 362-page book contains detailed information on Westinghouse products for the Construction Industry. It was designed specifically to meet the requirements outlined by Architects and Engineers themselves.

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Elections and Activities

A. W. Kochler, of Washington, D. C., is chairman of the administrative committee of the National Highway Users Conference.

David H. Harker, former chief engineer for the Indiana Flood Control and Water Resources Commission, is now head of the Indiana Drainage Association.

Cleveland chapter of the Ohio Society of Professional Engineers elected Raymond A. Freese, president; Paul Harlamert, vice-president; John O. Barrett, secretary; Fred Gaub, treasurer; and Thompson Hindman, trustee.

Zanesville chapter of the Ohio Society of Professional Engineers has elected E. F. Shaffer, president; W. F. Williams, vice-president; E. L. Milliron, secretary, and R. L. Campbell, trustee. Directors named were E. S. Abele, J. W. Alter, H. T. Burnham, and R. W. McAllister.

A new chapter of the Washington State Society of Professional Engineers, affiliated with the National Society of Professional Engineers, has been organized at Wenatchee with P. F. Helmer as temporary president. James Wallace vice-president and A. A. Whipple secretary-treasurer.

W. F. Crawford of Pittsburgh has been elected president of the Constructors Association of Western Pennsylvania, announces Roy A. MacGregor, executive secretary. Mr. Crawford succeeds Dan Dinardo. J. E. O'Leary of the Pittsburgh Des Moines Steel Co. was elected to succeed Mr. Crawford as vice-president of the Heavy division and Roy F. O'Mara of the Allegheny Asphalt & Paving Co., was reelected vice-president of the Highway division. Mr. Dinardo will take over the duties of treasurer of the association and Russell C. Swank of the Freeland Construction Co. will be the new secretary with Wm. R. McQuade, of the James H. McQuade & Sons Co., assistant secretary.

Central Ohio chapter, Ohio Society of Professional Engineers, has elected Ralph T. Burson, Newark, president; Bruno Romano, Lancaster, vice-president; and Roy A. Corby, Newark, secretary-treasurer. Directors are W. F. Robb, Mt. Vernon; William H. Fouse, Lancaster; and C. W. Irwin, Newark.

R. E. Jenkins, Gallipolis, has been elected president of the Ohio Valley chapter of the Ohio Society of Professional Engineers. L. E. Niday, Gallipolis, is vice-president; C. M. Ramsey, Gallipolis, secretary treasurer; R. E. Bischoff, Gallipolis, trustee, and D. M. Blake, Jackson, delegate to the Community Planning Committee.

Maumee Valley chapter of the Ohio Society of Professional Engineers, comprising eight northwestern Ohio counties, has elected Burt F. Wyandt, Lima, president; T. E. M. Carville, Lima, first vice-president; Francis H. Connors, Van Wert, second vice-president; and Fred C. Horn, Lima, secretary-treasurer. Directors elected were Edwin F. Mattison, Lima; Walter Davis, Bryan; Harold G. Cooper; Carl H. Gerken, Napoleon; Charles H. Dunakin, Paulding; G. M. Cartwright, Lima; and A. O. Tinker, Van Wert.

At a recent meeting of the Texas Construction Council this board of directors was elected: H. P. Kucers, Dallas, chairman; J. M. Nagle, Houston; G. W. Parkhill, Lubbock; Uel Stephens, Ft. Worth; Tom Rather, Houston; A. J. McKenzie, Jr., San Antonio; Wm. P. Glade, Ft. Worth; Mr. McKenzie is the vice-president, for 1949 and Mr. Glade is secretary.

J. H. Buehler has been elected president of the Nevada section of the National Society of Registered Professional Engineers. Other officers, Fred W. Clayton, 1st vice-president; R. W. Millard, 2nd vice-president; George Van Fobel, 3rd vice-president; Paul Gammel, treasurer; and L. J. H. Smith, national representative.

MAJOR MEETINGS

Society for Experimental Stress Analysis, Hotel Statler, Detroit, Mich., May 19-21.

American Water Works Association, Stevens Hotel, Chicago, Ill., May 30-June 3.

President's Highway Safety Conference, Washington, D. C., June 1-3.

Central States Sewage Works Assn., Hotel Sherman, Chicago, Ill., June 17-18.

American Society of Engineering Education, Rensselaer Polytechnic Institute, Troy, N. Y., June 20-24.

Symposium on Research in Water, Sewage and Industrial Wastes, sponsored by Public Health Service, Dept. of Commerce Auditorium, Washington, D. C., June 23-24.

American Society for Testing Materials, Chalfonte-Haddon Hall, Atlantic City, N. J., June 27-July 1.

Manufacturers' Publications

Better Floors—A booklet "Materials for Better Floors" contains extracts from an article "If you are Installing a Concrete Floor, Install a Good One." This article and other data presented have been carefully checked by cement technicians and specialists in heavy duty floors. — Floor Material Industries, Inc., 630 Fifth Ave., New York 20, N. Y.

Vibration Control—Typical installations in which cork may be satisfactorily used to control transmission of vibration and noise, installation data, and information on specification writing are given in a new illustrated bulletin. Five convenient forms are listed and their construction described together with the static load ranges for each form ranging from 400 to 30,000 lb. per sq. ft. and dimensions in which they are available. — Korfund Co., Inc., 32d Place, Long Island City 1, N. Y.

Roller Chains—A 12-page catalog contains helpful information regarding the use and specification of roller chain. It describes new features for safety, wear, and maintenance found in Atlas Chain as well as its operating characteristics. Photo-micrographs, engineering drawings, and component photographs illustrate construction from complete assembled chain down to metallurgical characteristics. Specifications and prices for most sizes of American Standard Roller Chain—and attachments—are also included.—Atlas Chain and Manufacturing Co., Castor & Kensington Aves.; Philadelphia 24, Pa.

"Ambassadors on Wheels"—Drivers who operate a fleet of 30 trucks delivering ready-mixed concrete in Pittsburgh and Western Pennsylvania get a thorough indoctrination in company policies and customer relations in a 34-page, two-color booklet titled, "Your Job at Dravo." It was prepared for drivers joining the organization by the Keystone Division. A chapter explains concrete mixing technique, giving the driver a fundamental knowledge of the various types of concrete mixes and their application. More than 30 cartoons are used to illustrate various subjects discussed. — Dravo Corp., 51st and Liberty Aves., Pittsburgh 22, Pa.

Swimming Pool Equipment—A new booklet describes the latest equipment

for recirculation, filtration, chlorination, softening and pH control. Manual and automatic valves are explained and many installations are illustrated. A complete line of accessories, such as suction cleaners, heaters and test kits, are described. Complete specifications are given. — THE PERMUTIT CO., 330 W. 42ND ST., NEW YORK 18, N. Y.

High Speed Hauling—Power and speed for hauling feature the new 8-page booklet, "Caterpillar Diesel DW-10 in Action." Presenting many applications, the pamphlet offers readers operation and performance data in earthmoving, land leveling, shovel loading and other types of work.—CATERPILLAR TRACTOR CO., PEORIA 8, ILL.

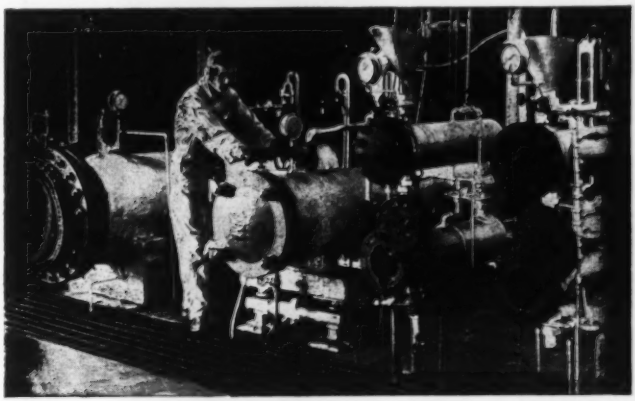
Stud Welding Gun—Twenty-four picture paragraphs covering as many popular uses of the Nelson stud welding gun are included in a new 8-page catalog of manufacturing and construction applications. Typical production units and a wide range of special studs are shown along with a concise description of the Nelson method of fastening to metal.—NELSON STUD WELDING DIVISION, MORTON GREGORY CORP., LORAIN, OHIO.

Strainer Bulletin—A bulletin providing information on forged steel strainers has been issued. Edward strainers have an ASA rating of 600 lb. at 850 F for steam, oil, or vapor, and a hydraulic rating of 1440 lb. at 100 F. Bulletin contains complete information on dimensions and weights, correct installation, maintenance, and cleaning. — EDWARD VALVES, INC., EAST CHICAGO, IND.

Pre-plated Metals—A handy index to a wide selection of pre-plated metals is the new nickeloid metal sampler and file folder. The die-cut sampler, a 4-page, letter-size folder, contains samples of Nickeloid metals finished in chrome, copper, nickel and brass—available on zinc, steel, copper, brass and aluminum bases. In addition to actual samples in bright and satin finishes, striped and crimp designs, complete data is given on the sizes of sheets, coils and flat strips available. —AMERICAN NICKELOID CO., PERU, ILL.

Electric Car Pullers—A booklet describes capstan, drum and continuous rope types of American electric car pullers for efficient low cost car spotting. This company has also issued new catalogs on blocks and sheaves and the economical portable utility hoists. —AMERICAN HOIST AND DERRICK CO. ST. PAUL 1, MINN.

These experimental wood-treating cylinders vary in size from 2" x 12" to 4' x 20'. It is possible to make detailed studies ranging from test-tube quantities to semi-commercial quantities.



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helps improve serviceability of wood

The Koppers Technical Laboratory at Orrville, Ohio is one of the most complete wood-treating laboratories in the world. Here, Koppers experts, working with the best in modern equipment, lead the field in the development of improved wood-preservatives and techniques.

In addition to other research, the staff of this laboratory is constantly working on the following projects: a continuing study of pressure-treatment with creosote; the evaluation of all known treating materials; the development of new preservatives.

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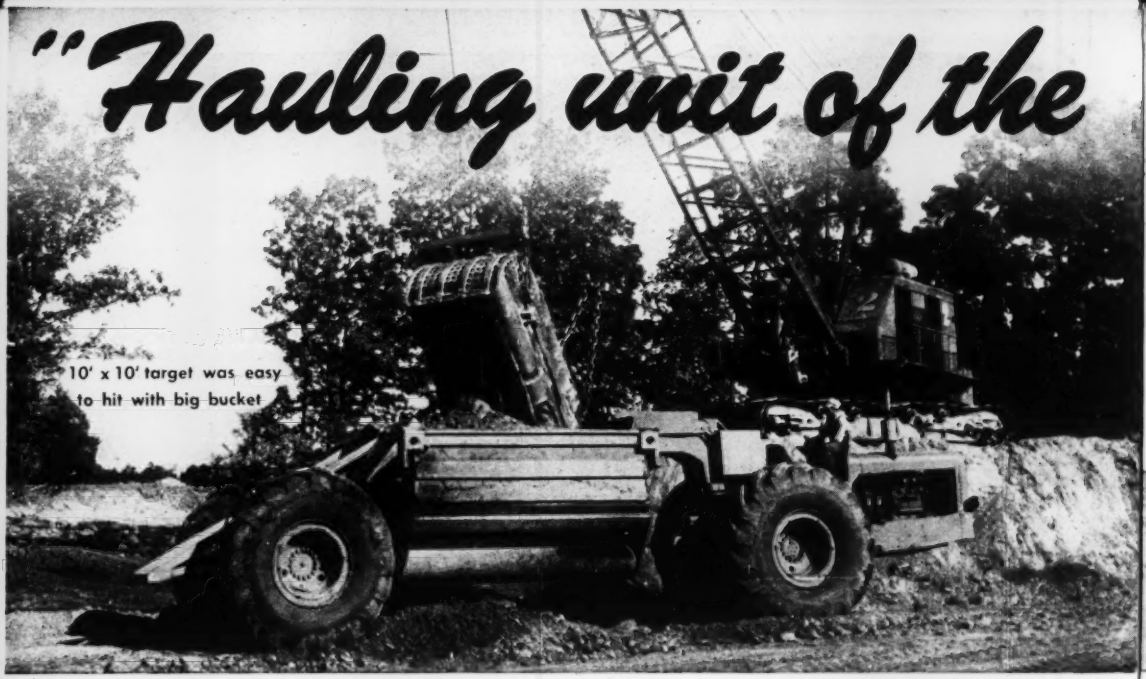
This famous Koppers Technical Laboratory is now equipped to handle your specific wood-treating problems. Its technical staff welcomes your inquiries, and will gladly recommend the *proper* technique of treatment . . . the *proper* type of preservative to meet your individual needs. Write for further information.

KOPPERS PRESSURE-TREATED WOOD

KOPPERS COMPANY, INC., Pittsburgh 19, Pa.

"Hauling unit of the



T. L. James & Co., Inc. and Guilliams Bros.

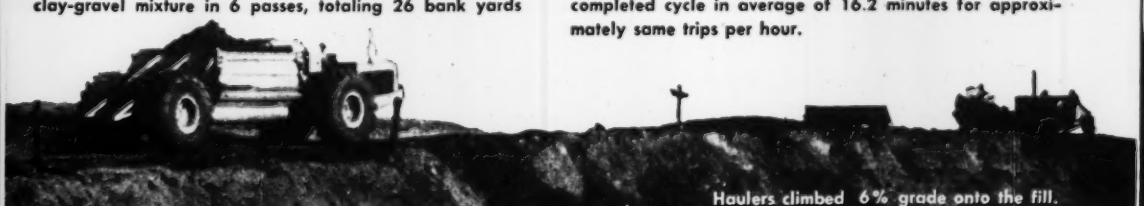
of Ruston, Louisiana, have been working a Tournahopper, LeTourneau's bottom-dump hauling unit, all through the '48 season at Enid Dam along with a fleet of other bottom-dump wagons. This flood control project for the U. S. Engineers is a 6,000,000-yard earth fill on the Yocona River, South of Batesville, Mississippi. Equipment works on a 24-hour, 7-day week schedule. Time studies showed that this 35-ton Tournahopper out-maneuvered and out-produced every hauling unit on the job.

117 yards per hour on 1¼-mile haul

On one section of the job, the Tournahopper was loaded by a dragline carrying a light perforated bucket measuring 4¼ yards struck. The Tournahopper was heaped with a clay-gravel mixture in 6 passes, totaling 26 bank yards (weighed) in average loading time of 2.77 minutes. Haul was 2½ miles round trip over well maintained and watered haul-road with all grades favorable except 400' of 6% adverse at the fill. The return had 1000' of 6% climb to borrow area. Tournahopper dumped its load in 0.18 minutes, spreading over 35'. Overall cycle averaged 13.4 minutes for 4½ cycles per hour.

97 yards per hour on 1⅓-mile haul

Several weeks later the Tournahopper was making a 2⅔-mile cycle in 16 minutes. Material here was sandy clay and gravel weighing 2900 lbs. per bank yard. 7,100' haul included adverse grades measured at 1200' of 6%, 1100' of 2%, and 400' of 4% with favorable stretches of 700' at 12% and 600' at 3%. Spotting took 0.3 minutes . . . 6 bucket-loads averaged 2.7 . . . dump took 0.15 minutes . . . average time for complete cycle was 16 minutes. This gave 3.7 trips per hour with 26.3 (weighed) bank yards each. On same cycle, other 20-ton capacity rubber-tired hauling units showed weighed loads of 14.9 bank yards, completed cycle in average of 16.2 minutes for approximately same trips per hour.



Haulers climbed 6% grade onto the fill.

R. G. LeTOURNEAU LET EQUIPMENT

Mail today to: **R. G. LeTOURNEAU, Inc., Peoria, Illinois**

Please send complete information on Tournahoppers to handle approximately ..... yds. per month ..... ft. average haul.

COMPANY .....

NAME ..... ADDRESS .....

TITLE ..... CITY & STATE .....

future" ... says R. B. Guilliams

"Without a doubt the Tournahopper is the hauling unit of the future. It's just as fast on the haul road as our other hauling units. Gets in and out of bad spots with ease while our other units require the help of a dozer. In spite of its large loads, does not rut the fill or cut up our haul roads."

R B Guilliams

Loads weighed out at 26 bank yards.

51% of loaded weight on drive tires

Also interesting to note is that Tournahopper pulled out of loading pits and off fills unassisted where ordinary bottom dumps bogged down. Loaded weights showed Tournahopper carrying 51% of the load on the drive tires while other haulers could put only 46% on the drivers . . . an important Tournahopper traction advantage that pays off — especially in tough, slippery going.

"Big, easy target", says dragline operator

William Dewitt Wrenn, dragline operator, says: "Have been operating draglines for 8 years and Tournahopper is easiest unit I ever loaded. Sure is a big target . . . you don't have to spot bucket carefully . . . just swing and let go. Tournahopper gets under dragline and away in all kinds of digging better than other hauling units. Takes 6 to 7 full buckets . . . don't spill much off the sides with the big bucket like other bottom dumps."

"Easier, safer, faster", says Tournahopper operator

Morris Ashmore, Tournahopper operator, says: "Like the Tournahopper better than any dirt hauler I've ever run. It's easier and safer to operate than other rigs . . . won't jack-knife on slick haul-roads. On the fill I have control in dumping my load . . . can dump it or spread it and then get off the fill faster than any other hauler."

Like James and Guilliams you, too, will find Tournahoppers give you:

1. Better maneuverability in pit and on fill.
2. Faster spotting under loading unit.
3. Better traction . . . will go through where other units stall.
4. Faster loading in proportion to capacity.
5. Ease of operation . . . much less operator fatigue.

Ask about these big 35-ton, bottom-dump hauling units today. Tournahoppers will cut your hauling cost.

Tournahopper—Trademark C113

Tournahoppers dumped clean in 9 to 11 seconds.

LeTOURNEAU TOURNAHOPPERS

PEORIA ILLINOIS

HIGH SPEED ON RUBBER PLUS TRACTION ADVANTAGES OF A CRAWLER

Dedicated to this Challenge:

TO BUILD A GREATER AMERICA

On the opposite page is the cover of ENGINEERING NEWS-RECORD'S "Building A Greater America" Issue to be published September 1.

The purpose of the "Building A Greater America" Issue is fivefold . . .

1. to commemorate the epic and inspiring engineering construction achievements of the past three-quarters of a century

2. to create a deeper understanding of the economic and social implications of construction and the key role of construction in American civilization

3. to help forward the building of a greater America by offering practical solutions to many of today's most perplexing engineering and construction problems

4. to instill a feeling of justifiable pride in all those who serve the engineering construction field in whatever capacity

5. to bring into sharp focus the tremendous opportunities and challenges ahead as we enter the second half of the greatest construction century in history.

PUBLISHING DATE—SEPTEMBER 1, 1949
CLOSING DATE—AUGUST 11, 1949

TO THE MANUFACTURERS . . . CONSULTING ENGINEERING FIRMS . . . CONTRACTING AND BUILDING FIRMS . . . AND ALL OTHER ORGANIZATIONS SERVING THE ENGINEERING CONSTRUCTION FIELD . . .

To the Publisher of ENGINEERING NEWS-RECORD
330 West 42nd St., New York 18, N. Y.

☐ Please send me your booklet describing the editorial features and advertising values of your September 1 "Building A Greater America" Issue.

☐ Please reserve for me_____copies at $3.00 each of your "Building A Greater America" Issue. ☐ Payment enclosed. ☐ Bill me later.

Name_____

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The September 1 "Building A Greater America" Issue will become the proud possession of 41,678 paid subscribers to ENGINEERING NEWS-RECORD . . . the men who plan, design, construct, own, operate and maintain engineering construction projects of every type. In addition, there will be substantial extra distribution at $3.00 per copy.

We have prepared a booklet describing the many unusual editorial features in this Issue which will stir the interest and imagination of everyone interested in construction.

In addition, this booklet offers compelling reasons why the September 1 Issue provides you with an unique opportunity to tell—*with special effect*—the full story of your own contributions to the engineering construction field and to the building of a greater America.

For your copy of the "Building A Greater America" booklet, mail the attached coupon to: R. F. Boger, Publisher, ENGINEERING NEWS-RECORD, 330 West 42nd Street, New York 18, N.Y.

75th ANNIVERSARY

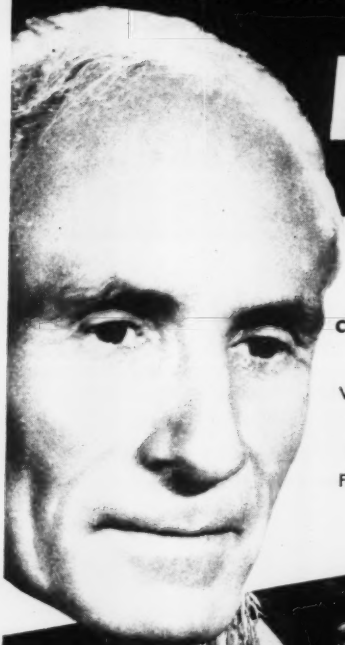
ENGINEERING NEWS-RECORD

September 1, 1949

BUILDING A GREATER AMERICA

The epic of America is a story of its construction men and their vision. First by hand, then with machines, the American dream of a better way of life has been made real for many, but not yet for all. As we face the next half of the twentieth century, America's destiny will challenge all the physical and spiritual resources of the construction fraternity. To build a greater America, to make the American dream a reality for all peoples . . . to that challenge this issue is dedicated.

"From then on, we bought McCULLOCHS"



McCULLOCH McC CHAIN SAWS

Ralph C. Puckett

CALIFORNIA TREE SERVICE, Los Angeles, says

"We really gave our first McCulloch chain saw a work-out. We tested it on big trees, little trees, branches, hard wood, soft wood, palm, roots, knots, and angle cuts. We found the McCulloch cut faster, was easier to use and carry, and saved money on sharpening. From then on, we bought McCullochs. We've now got ten more like the first, and they're all the best saws we've ever used."

CUT OFF TREE AT 30 INCHES

The 5-hp McCulloch makes quick work of big trees. The Rip-Cross chain cuts cleanly in any direction—saves time on angle cuts and roots, as well as crosscut or rip.

LIMB AND BUCK FELLED TREE

Light weight (49 lb. as shown) and good design make McCullochs easy to handle, save muscles and time. Another time-saver on the job is easy sharpening and no setting of chain teeth.

SIX MODELS AVAILABLE

All prices f. o. b. Los Angeles

20-inch Chain Saw..$385.00

30-inch Chain Saw..$395.00

40-inch Chain Saw..$405.00

50-inch Chain Saw..$415.00

60-inch Chain Saw..$425.00

20-inch Bow Saw...$425.00

NATIONWIDE SALES AND SERVICE

McCULLOCH MOTORS Corporation

6101 West Century Boulevard
Los Angeles 45, California

Write **FOR ILLUSTRATED LITERATURE OR NAME OF NEAREST DEALER**

NEW PRODUCTS

Twin Powered Scraper

A twin powered scraper, now in the field test stage, puts the Euclid Road Machinery Co. of Cleveland back in the scraper field for the first time since 1939.

The scraper uses two 190-hp. diesel engines, one on the tractor and the other mounted in the rear over the scraper's axle. This arrangement provides in one machine, with a single operator, what generally requires an extra "pusher cat" to assist in filling operations and occasionally in negotiating grades. Because of its surplus power and ample traction (with the tires sized 27.00 x 33 on the rear of the scraper), it can operate efficiently wherever soil will support the vehicle's 57,800-lb. weight.

Capacity of the scraper is 18 yd., and with crown sides it can tote a load of 23 to 25 yards. Mechanism is of the same type used on conventional hydraulic scrapers; it has a 9½ ft. wide cutting edge.

Engines are synchronized through the hydraulic drive, and the torque converter on each engine permits shifting to any one of the three speed bands while under full load.

Engineers at Euclid believe the new type scraper may bring about an entirely new principle in earth moving. While the present model has not been designed with the thought of replacing the bulldozer, tests show it operates well in any type of earth and readily handles coarse gravel and stone. It can turn in its own 44-ft. length and operates either forward or backward with equal facility. Engines can be operated either as a unit or separately, but the twin engine scraper is a complete unit and is not designed or engineered to be uncoupled.

Bottom Dump Truck

Second innovation in the company's line of earth moving equipment now being tested is a twin powered bottom dump truck. It, too, is equipped with two 190 hp. diesel engines, one driving the tractor's rear wheels and the other in the rear driving the trailer wheels. Each engine is individually controlled by the driver with a torquematic transmission making available three forward and one reverse speed with semi-automatic shifting.

Capacity of the dump body is 18 cu.yd. and heaped capacity is 22 cu. yd. Euclid Road Machinery Co., Cleveland 17, Ohio.

Roof Protection

Permalume Foils, designed to provide a durable, flexible, seamless metallic shield firmly bonded over asphalt and composition roofs, may also be used for other purposes where a waterproof, light-and-heat-reflecting coating is desirable over brick, concrete, metal, wood and other surfaces. It is fire and weather-resistant. It has been tested for years and found very satisfactory. In making it, purest aluminum or copper is combined with natural hydrocarbon compositions and fluxed with a softer, specially processed material and mixed to a very heavy paste cut to a consistency resembling that of quicksilver. The maker claims that Permalume, applied from solution, will more than double the useful life of asphalt roofing.—Grems Mfg. Co., 222 Spring St., Klamath Falls, Ore.

Pipe Lagging

Developed to provide a permanent type reinforcing membrane fabric for water and corrosion proofing treatment, Glassfab is now being successfully used as pipe lagging on interior, exterior and underground lines. Woven wholly from glass fibers, its inorganic nature offers many advantages over organic fabrics. It is strong and durable, resisting wear and abrasion. Impervious to moisture, it is rot proof. It does not char under the high temperatures of hot bitumen, thus retaining its full strength. It has no capillary or "wicking" action, so does not carry the volatile oils up out of the mastic and does not conduct moisture into coating.—Lexington Supply Co., Dept. 158, 4815 Lexington Ave., Cleveland, Ohio.

Efficient Pipe Saw

The special features of this portable automatic pipe saw which it is claimed "cuts time as well as pipe" include these: Powered by an air motor—no flames near cut; two men can handle the machine, which weighs 200 lb. and it can be set up in 15 minutes; a clean accurate milled cut assured; minimum 14-in. clearance in ditch; complete cut made in one rotation around the pipe; grease seals keep lubrication in and water, sewage, sand, scale and cuttings out; and adjustments easy to make.—The E. H. Wachs Co., 1525 No. Dayton St., Chicago 22, Ill.

(*Continued on p. 57*)

Now! When You Order Forget

Tests Prove Service Life of Tuffy is Greater

"After moving 1,834,000 cu. yds., the superintendent is very pleased with Tuffy Draglines, especially because they are digging back from a very steep slope in a 70 ft. hole under tough abrasive action. On basis of this performance, another set of 2½", 280' Tuffys, a set of 2", 225' Tuffys and a 2⅛", 216' and 2⅛", 224' Tuffy for a twin drag machine have been ordered to replace competitive ropes."

"Tuffy Dragline's ruggedness gave well over 300 percent improvement in performance plus considerable time saved changing lines."

From all parts of the country, replies such as these verified the claims made by Union Wire Rope engineering specialists who designed Tuffy Draglines. In-the-field tests were made under severe operating conditions where Tuffy handled many types of material on different equipment. Tuffy's extra flexibility, abrasive resistance and stamina were challenged in digging, casting, and loading operations. Yet results of the tests were the same in all cases: Longer Life, Better Performance, Greater Economy.

Tuffy is a special rope for any and all dragline jobs. It is designed by the same specialists who have made hundreds of other Union Wire Rope products the standard of quality in the construction field.

UNION WIRE ROPE CORP

union *Wire Rope*

DRAGLINES . . .
Everything Except

Just These 3 Specifications

Tuffy . . . Size . . . Length—that's all you order to get the RIGHT dragline for your particular job. No more confusing specifications, only to end up with a rope that is restricted to use under limited operating conditions. Now—in one simplified order—you get Tuffy Draglines designed to give maximum performance in *all* operations.

Always specify Tuffy when you order. (Example: 225' 1¾" "Tuffy" Dragline). Mail coupon today for illustrated folder.

Tuffy DRAGLINES
are Built Tough to Meet all Operating Conditions

Extra flexibility and maximum abrasive resistance are built into Tuffy Draglines to assure dependable performance on any type of equipment—handling any type of material. Wet and dry dirt, sand, rock, gravel, cement, minerals, all give way to Tuffy's structurally tough construction. At high speeds or low speeds, Tuffy Draglines give top operating efficiency; they hold securely to drum when casting, ride better on grooves and are easier and safer to use. Put Tuffy to the test! He's built tough!

UNION WIRE ROPE CORPORATION

2228 MANCHESTER AVENUE **KANSAS CITY 3, MO.**

☐ Send Complete Illustrated Folder on Tuffy Draglines.

For Tuffy Draglines — See Your Union Wire Rope Distributor (Listed in Yellow Section of Your Telephone Directory) and or Send This Coupon.

FIRM NAME .....

ADDRESS .....

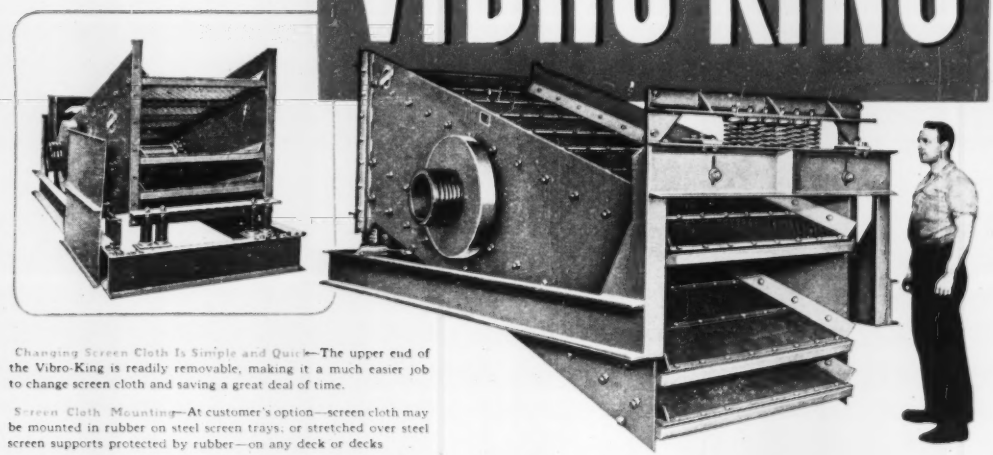
CITY ..... ZONE .....

STATE .....

trouble-free screening

with the

TELSMITH VIBRO-KING



Changing Screen Cloth Is Simple and Quick—The upper end of the Vibro-King is readily removable, making it a much easier job to change screen cloth and saving a great deal of time.

Screen Cloth Mounting—At customer's option—screen cloth may be mounted in rubber on steel screen trays, or stretched over steel screen supports protected by rubber—on any deck or decks

● Simpler in design and more efficient, with lower upkeep—the Telsmith Vibro-King has only two bearings instead of the usual four. The vibrating unit is mounted on these two well protected, heavy-duty roller bearings. The Telsmith-patented automatic counterweights assure smooth starting and stopping as well as exceptionally smooth operation. The circular screening movement is uniform everywhere on the screen cloth, and is constant under any load. Entire vibrating mechanism, including vibrating unit and screen cloth, floats on nests of springs. Adjustment to the right screening angle is quick and easy. It's an efficient and rugged screen at a reasonable price. The welded and reinforced main frame is *horizontal*—for rigidity, and easier installation. Cable suspension if desired. The Telsmith Vibro-King Screen is made in several sizes with 1, 2 or 3 decks. Send for Bulletin V-2.

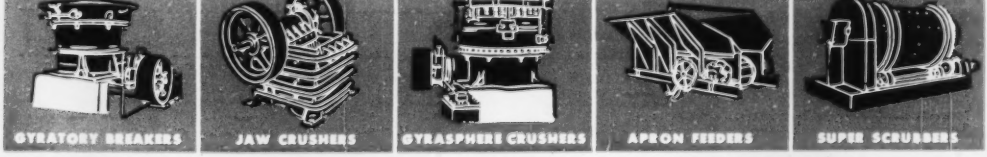
V-2R

SMITH ENGINEERING WORKS, 500 E. CAPITOL DRIVE, MILWAUKEE 12, WISCONSIN

Cable Address: Sengworks, Milwaukee

51 East 42nd St. New York 17, N. Y. · 211 W. Wacker Drive Chicago 6, Ill. · 713 Commercial Trust Bldg. Philadelphia 2, Pa. · 238 Main Street Cambridge 42, Mass. · Boehck Eqpt. Co. Milwaukee 3, Wis. · Mines Eng. & Eqpt. Co. San Francisco 4, Calif.

Clyde Equipment Co., Portland 9, Ore., & Seattle 4, Wash. • General Machinery Co., Spokane 1, Wash. • Brandeis Machinery & Supply Co., Louisville 8, Ky. • Rish Equipment Co., Charleston 22, & Clarksburg, W. Va.—Roanoke 7, & Richmond 10, Va. • Wilson-Weesner-Wilkinson Co., Knoxville 8, & Nashville 6, Tenn.



Asphalt Joint Remover

Machine powered by 4-hp. gasoline engine rides on pneumatic tired wheels and is equipped with rotary carbide-tipped cutter to remove asphalt joint material on highway and airport runways. Exchangeable cutter accommodates various widths of joint. Waste material is collected by a pick-up device. Depth of cut is controlled by wheel on handle of machine.—San Jose Pipe & Tank Co., West San Carlos St., San Jose, Calif.

Cement Tester

Upon the recommendation of the Portland Cement Association, cement manufacturers have adopted the autoclave test as a criterion of volume constancy to guard against any possibility of unsoundness in cement not revealed by other tests. The Autoclave-cement soundness testing equipment is designed especially for conducting accelerated soundness tests on cement according to ASTM Method C151-43. It is also suited for other purposes requiring a constant steam pressure with corresponding constant temperature within the range between 60 and 350 psi. The autoclave consists of a drawn steel cylinder with bolted cover mounted in a sturdy supporting frame and enclosed in a heat-insulated metal housing. Heating is accomplished by electric units beneath the cylinder, controlled from a switch panel on the front of the control box on the side of the housing.—Central Scientific Co., 1700 Irving Park Road, Chicago 13, Ill.

Entrained Air Indicator

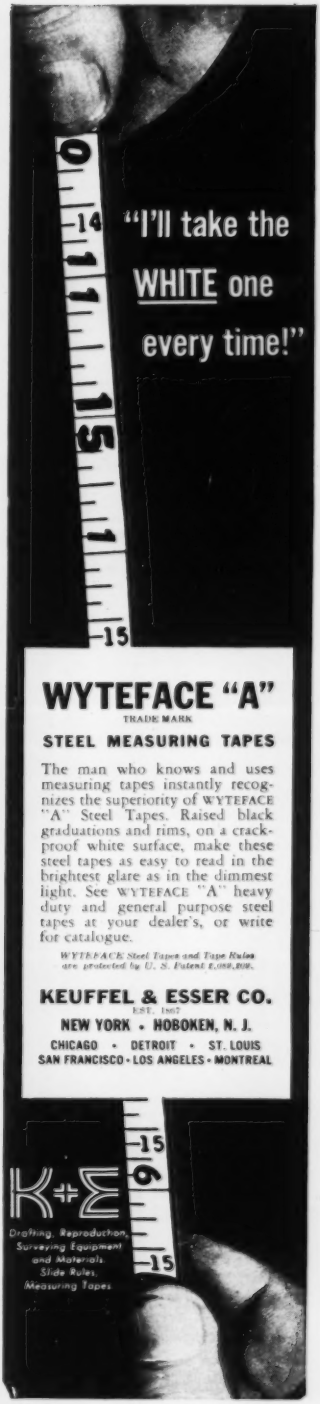
"Cenco" is for measuring the percentage of air entrained in fresh concrete mixtures by the pressure method suggested by W. H. Klein and Stanton Walker, and further developed by C. A. Menzel of the Portland Cement Association. The sample of concrete is placed in a calibrated bowl and struck off flush with the flange. A cone-shaped cover is clamped to the flange of the bowl, a pressure-tight seal being obtained with a rubber gasket cemented to the cover. The space above the concrete is then filled with water to the zero mark on the graduated, vertical, precision bore glass tube attached to the cover. Pressure is applied to the concrete by pumping air into the space over the water column until the pressure gage indicates the predetermined operating pressure. Air pressure from a small hand pump is indicated by a precision gage graduated to 0.2 psi with a range of 15 psi. The contraction in volume of the air in the concrete with increased pressure is shown by a lowering level of the water in the graduated glass tube, the scale on which indicates the gross air content in percent.—Central Scientific Co., 1700 Irving Park Road, Chicago 13, Ill.

Marble-Faced Concrete Block

With Knighton process, marble face is an integral part of the concrete block, not bonded on later but made in the same process in which the concrete block is formed. Block is designed to produce a finished exterior or interior wall in one masonry operation.—Knighton Process Marble Face Block Licensing Corp. of New York, 1776 B'way, N. Y. C.

Concrete Vibrator

The "Mighty Midget" universal electric concrete vibrator is built so light and compact that it takes only one man to handle it. The motor runs on 115-volt AC-DC current with models also available for 230-volt AC-DC current. It has a loop handle with built-in switch, a 15-ft. cord and plug, and a patented vibrator head. It is 48 in. overall and weighs 27 lb.—Mall Tool Co., 7,740 Chicago Ave., Chicago 19, Ill.


"I'll take the
WHITE one
every time!"
WYTEFACE "A"
TRADE MARK
STEEL MEASURING TAPES
The man who knows and uses measuring tapes instantly recognizes the superiority of WYTEFACE "A" Steel Tapes. Raised black graduations and rims, on a crack-proof white surface, make these steel tapes as easy to read in the brightest glare as in the dimmest light. See WYTEFACE "A" heavy duty and general purpose steel tapes at your dealer's, or write for catalogue.
WYTEFACE Steel Tapes and Tape Rules are protected by U. S. Patent 2,088,808.
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CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

ELSIE EAVES, Manager — *J. A. MAHONEY, Reports* — *M. R. ROESSLER, Statistics*

WATER SUPPLY

LOW BIDDERS

●**Calif., Los Angeles**—Los Angeles Dpt. Water & Power, 207 S. Broadway. May 9. Tunnels 1, 2, 3 and Surge Chambers 1, 2 and 3, from Gny F. Atkinson Co., 324 N. Micheltorena St., Los Angeles, Bressi & Bevanda Constructors, Inc., 417 S. Hill St., Los Angeles, David G. Gordon, 1900 21 St., Denver 5, Colo., and Teichert & Sons, 1346 37 St., Inc., Sacramento, **$9,173,000.** CD 4/20—ENR 4/28.

†Tex., Camp Hood (Br. Killeen)—U. S Eng., 606 Santa Fe Bldg., Galveston. May 3. c. i. waterlines and fire plugs, appurtenances from Shaw & Estes. 1407 S. Akard St., Dallas. **$30,264.** Est. $50,000. CD 4/12—ENR 4/14.

Tex., Coleman—City, R. E. Murphy, mayor. May 3, 30,000 lin. ft. 14 and 15 in. rein.-con. water pipeline from Hord's Creek Dam to Waterworks Pump Station, from V. T. Irons, Arlington. **$31,381.** CD 4/20.

CONTRACTS AWARDED

Colo., Canon City—City, City Hall, water sys. imprvs., incl. basins at reservoir, pipeline in Royal Gorge, intake basins to replace in north part of city, pump, plant on Arkansas River west of Sada Point, to Mann Constr. Co., Littleton, **$275,890.** Bids 5/2, awarded 5/5. CD 4/12—ENR 4/14.●

Utah, Orem—Town, c/o O. E. Pyne, recdr., 2 m. gal. steel water tank, to Keyes Tank & Supply Co., Casper, Wyo., **$40,398.** CD 12/15—ENR 1/7.

SEWERS, WASTE DISPOSAL

BIDS ASKED

May 23

Conn., Hartford—State, G. Albert Hill, hy. comr., laying 3,494 ft. storm water sewers in Church St., Rocky Hill.

Ont., St. Catharines—Chairman and Members Civic Development Com., City Council, 24- to 66-in. rein.-con. pipe or equivalent, 24 in. vitr. tile sewer pipe, appurtenances, 4 ft. 6 in. x 4 ft. 3 in. monolithic concrete sewer, etc., for City Engr. H. Smith, C/K. approx. $220,000. Duncan, Philips & Roberts, 63 John St., S., Hamilton, engrs. CD 1/5/47—ENR 1/23/47.

June 16

N. Y., Irvington—At office clerk Municipal Bd., Ferdinand H. Hettinger, chn., Main St., sewage treatment plant, sewers. Plans deposit $25; adv. ENR 5/19. CD 5/2/45—ENR 5/17/45 and CD 4/20/44—ENR 5/4/44.

LOW BIDDERS

Ark., Booneville—Bd. Trustees State Tuberculosis Hospital, Booneville, sewerage sys. extens., imprvs., from Worth-James Constr. Co., 1007 Pyramid Bldg., Little Rock, **$94,000.** CD 4/20—ENR 4/28.

Calif., Marysville—City, City Hall, May 2, sewerage sys. imprv., from Ted Bores Constr. Co., 365 Warwick Ave., San Leandro, **$261,452.** CD 4/19—ENR 4/21.

Calif., Quincy—Quincy Sanitary Dist., King Bldg., May 2, sewerage sys. imprvs., from Matthew & Jorgenson, Hughson. Schedule 1, **$103,095;** from Ted Bares Constr. Co., 465 Warwick Ave., San Leandro, Schedule 2, **$131,634.** CD 4/12—ENR 4/21.

†Tex., Camp Hood (P. O. Killeen)—U. S. Eng., 606 Santa Fe Bldg., Galveston. May 3, sanitary sewer lines from Shaw & Estes, 1407 S. Akard St., Dallas. **$53,400.** est $75,000 sewage treatment plant from Robert E. McKee, P. O. Box 2848, Dallas. **$35,728** est. $85,000. CD 4/8—ENR 4/21.

Wis., Milwaukee—Sewerage Comn., Jones Island, rejected bids Apr. 28, furnishing c.i. pipe, L.B. **$80,152;** valves, L.B. **$87,664** for sewer, sewage treatment plant. Will readvertise. CD 4/4—ENR 4/21.

CONTRACTS AWARDED

Conn., New Haven—City, Hall of Records, sewage treatment plant, incl. settling tanks, control chamber, digestion tanks, appurtenances, East Shore Prof., to C. W. Balakeslee & Sons, Inc., 34 Waverly St., New Haven, **$429,597.** Bids 4/26. CD 3/29—ENR 3/31.

BRIDGES

BIDS ASKED

May 31

Pennsylvania—Pennsylvania Turnpike Comn., 11 N. 4 St., Harrisburg.

Dauphin Co.—substructure and superstructure, incl. wid'n. Swatara Creek Channel, Turnpike Sect. 23-A-1, Swatara Creek Bridge 0.117 mi. long, part of Philadelphia Exten. in Lower Swatara and Londonderry Twps. CD 1/19—ENR 2/3.

LOW BIDDERS

Illinois—State Hy. Dpt., Springfield, May 6, bridge, wid'n. 2 bridges, State Rt. 143, Massac Co., from E. T. Simonds Constr. Co., 202 W. Willow St., Carbondale, **$56,616***** substructure, steel bridge U. S. Rt. 66, Montgomery Co., from H. H. Hall Constr. Co., 211 S. 15 St., East St. Louis. **$132,952***** bridge U. F. 66, Sangamon Co., from Sangamon Constr. Co., 700 N. MacArthur Blvd., Springfield. **$58,376***** substructure and erect steel bridge on State Rt. 884, White Co., from Shappert Eng. Co., E. Menominee and Blaine Sts., Belvidere. **$101,409***** substructure, earth approaches and erecting steel, R. R. subway on Ill. Rt. 10, Vermillion Co., from McCalman Constr. Co., 619 Section St., Danville, **$128,469.** CD 4/25—ENR 4/28.

Massachusetts—Mystic River Bridge Auth., E. A. Brest, chn., 6 Beacon St., Boston. Apr. 12, approaches, Mystic River Bridge, Charlestown and Chelsea, Contr. 10, from Coleman Bros., Inc., 40 Central St., Boston, **$384,060.** CD 3/23—ENR 3/31.

Massachusetts—Mystic River Bridge Auth., 6 Beacon St., Boston, Zone 8, Apr. 18, toll plaza, administration bldg., Mystic River Bridge, Charlestown and Chelsea, Contr. 9, from Merritt-Chapman & Scott Corp., 79 Milk St., Boston, **$384,000.** CD 3/30—ENR 4/7.

●**Pennsylvania**—State Hy. Dpt., Harrisburg, May 6, superstructures for continuous truss bridge and 3-beam bridge approach spans, L 933 ft., L. R. 330 (9 B), T. R. 51, Allegheny Co., from Fort Pitt Bridge Works, Keystone Hotel, Pittsburgh, **$1,923,713***** continuous I-beam highway overhead bridge, 567 ft., L.R. 378 (8K-1A), T. R. 156, 1 m. point west of Westmoreland-Armstrong Co. line to point southwest of bridge over Long Run, Armstrong Co., from Freeland Constr. Co., Pittsburgh, **$70,801.** CD 4/20—ENR 4/28.

CONTRACTS AWARDED

Kentucky—State Hy. Dpt., Frankfort, steel superstructure, bridge across Cumberland River, Monticello-Burnside Rd., SP 100-155, Pulaski Co., to Mount Vernon Bridge Co., Mount Vernon, O., **$680,795.** Bids 4/8. CD 4/18—ENR 4/21, under LB.

Minn., Minneapolis—State Hy. Dpt., St. Paul, Bridge 5591 over Great Northern and Minneapolis and St. Louis Ry. tracks, 7 St. N., S. P. 27-518-01, FAGM 23 (1), Hennepin Co., to W. D. Gietzen Co., 900 Glenwood Ave., **$942,184.** Bids 4/8. CD 4/20—ENR 4/28, under LB.

STREETS AND ROADS

BIDS ASKED

May 31

Calif., Los Angeles—Bd. Supervs. Los Angeles Co., 501 Hall of Records, grading, curbing, guttering, paving 4.847 ft. Alameda St. and Sepulveda Blvd., Wilmington. Plans deposit $5. 2.4 mi. Ganesha Ave., Walnut Ave. to Holt Hy., approx. $50,000 each. C. E. Arnold, co. engr. CD 9/19/45—ENR 9/27/45.

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $28,000; other public works $50,000; industrial buildings $68,000; other buildings $250,000.

Classes of Construction

(Name in order of Listing)

Water Supply	Latin America
Sewers, Waste Disposal	Public Buildings
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	

Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.;

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

♦	Federal Government
●	Project of $1,000,000 or over.
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

June 1

†Mississippi—U. S. Eng., P. O. Box $0, Vicksburg, asph. tr. roads, Sardis Dam, Serial No. Eng. 22-052-49-195.

LOW BIDDERS

California—State Hy. Div., State Bldg., Los Angeles, May 5, c. conc. 4.3 mi. Rosemead Blvd., Montebello, Los Angeles Co., from J. E. Haddock, **$538** E. Foothill St., Pasadena, **$461,771:** plant mix surf. 4 mi. hy., Oceanside, San Diego Co., from R. P. Shea, Indio, **$54,770.** CD 4/14—ENR 4/21.

California — State Div. Hys., Sacramento, May 4, plant road mix surf. 8.7 mi. between South County line and Benton Station, Mono Co., from Arthur A. Johnson, 421 Pearl St., Laguna Beach, **$56,454.**

Calif., Palo Alto—City, City Hall, May 2, imprv. Oregon Ave., etc. Res. No. 48-1, from L. C. Smith, 1 St. and Railroad Ave., San Mateo, **$203,302.** CD 4/20.

Calif., Redding—Shasta Co., Hall of Records, Redding, May 2, grading, plant mix surf. 2.722 mi., construct 115 ft. rein.-con deck bridge on Hy. 10-D and 10-E, Unit 2, between County Rt. 9-E, and Christensen Acres subdivision, from Eugene Alves, P. O. Box 390, Pittsburg, **$154,323.** CD 4/19—ENR 4/21.

●**Illinois**—State Hy. Dpt., Springfield, May 6, grading 2.14 mi. State Rt. 100, Alexander Co., from S. J. Groves & Sons Co., 228 N. LaSalle St., Chicago, **$305,428***;** road mix surf. tr., gravel or crushed stone base course, State Rt. 127, 65, 932, 901, 935, 937, 11A, Alexander, Pope Johnson, Massac, Pulaski, Saline, Hardin and Williamson Counties, from Triangle Constr. Co., 480 N. Evergreen Ave., Kankakee, **$299,784***** gray, or crushed stone-bit., State Rt. 96, Hancock and Henderson Counties, from Henry County Constr. Co., Cambridge, **$75,912***** bit. surf. tr., gray, or crushed stone base course, State Rt. 867, Lawrence Co., from Johnston Roadbuilders, Inc., 15 Fourth Ave., Joliet, **$197,392***** c. conc. 0.34 mi. State Rt. 44, Mason Co., from Sangamo Constr. Co., 700 N. MacArthur Bldg., Springfield, **$51,909***** c. conc. 5.25 mi. U. S. Rt. 67, Massac Co., from Cameron, Joyce & Co., 13 S. 7 St., Keokuk, Ia., **$644,566***** c. conc. 1.17 mi. U. S. Rt. 67, Rock Island Co., from Central Eng. Co., 2531 Rockingham Rd., Davenport, Ia., **$379,253***,** conc. 0.85 mi U. S. Rt. 66, Montgomery Co., from Maurice Hoefken, 222 W. B St., Belleville, **$211,844***** c. conc. 4.66 mi. State Rt. 164, Morgan Co., from O'Connor Constr. Co., 614 Reisch Bldg., Springfield, **$465,583***** gravel or crushed stone—bit. surf. tr., 4.34 mi. State Rt. 247, Putnam Co., from Strunk Bros., Tiskilwa, **$78,859***** grading 7.46 mi. State Rts. 58 and 66, Stephenson Co., from P. W. Ryan & Son, Janesville, Wis., **$130,324***** bit. resurf., c. conc. 2.09 mi. State Rt. 16 and 128, Wabash Co., from Jefferson Asphalt Co., 1209 Casey St., Mt. Vernon, **$154,927.** CD 4/25—ENR 4/28.

Ore., Corvallis—City, City Hall, city street paving from Warren Northwest, Inc., Box 5072, Portland, **$68,638.** Est. $73,999. V. L. Goodnight, engr.

Pennsylvania—State Hy. Dpt., Harrisburg, May 6, bit. surf. 21,632 ft. L.R. 181 (4), T. R. U. S. 31 from Ruffsdale West beyond Mendon, Westmoreland Co., from Burrell Constr. & Supply Co., Pt. 5 S. New Kensington, **$245,665**,** bit. surf. and I-beam bridge 1,650 ft., L. R. 61040 (1-B) T. R. 68, over Kinzua Creek, Warren Co., from Wayne Constr. & Mining Co., Brookville, **$127,581***** bit. surf. 12,791 ft. L.R. 4 (2), T. R. 322 (A), 5 Spruce Run, T. 1, 5 mi. from point 2.4 mi. west Nanticoke to point in Larksville Boro and in Wilkes-Barre City, Luzerne Co., from C. E. Goeringer Constr. Co., Wilkes-Barre, **$198,265***** bit. surf. 34,764 ft. L. R. 32 (6) T. R. U. S. 22, from Mifflin-Juniata Co. line to Mifflintown Boro, Juniata Co., from Tri-State Asphalt Corp., S. Broadway, Martins Ferry, O., **$198,628***** c. conc. paving, incl. rein.-con. box 9,686 ft. L. R. 139 (6), T. R. U. S. 422 between Heshbon and Palmyra, Dauphin Co., from C. W. Good, Inc., Lancaster **$230,096.** CD 4/20—ENR 4/28.

Tenn., Chattanooga—City, City Hall, Apr. 19, resurfacing streets, from Gamble Constr. Co., Lee Hy., **$189,000.** CD 4/11.

Utah, Cedar City—City, Ellen A. Simkins, recdr., rejected bids Apr. 21, Schedule 1, 15,237 lin. ft. concrete curb and gutter; 11,782 lin. ft. 4 ft. and 1,404 lin. ft. 5 ft. concrete sidewalk; Schedule 2, 15,914 lin. ft. concrete curb and gutter; 14,589 lin. ft. concrete sidewalk, L. R. **$153,113.** CD 4/4—ENR 4/7.

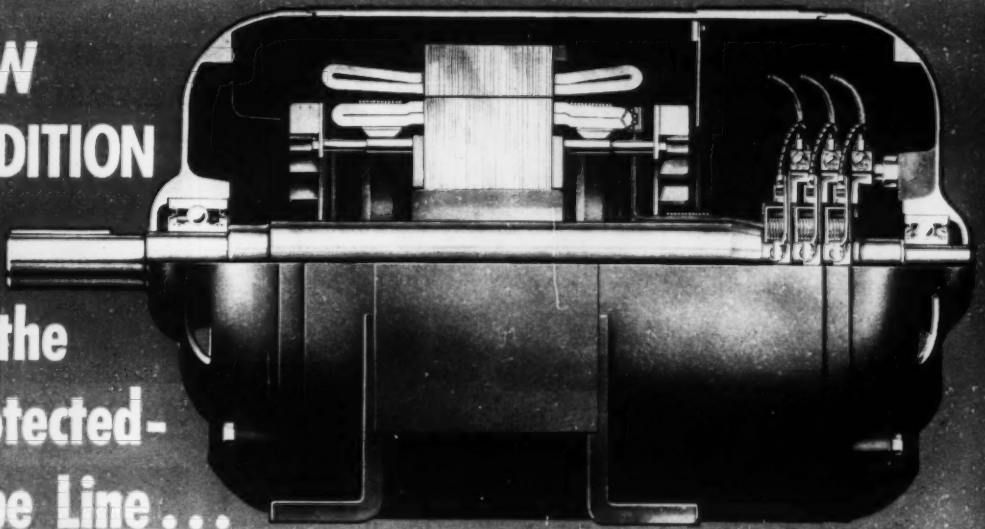
CONTRACTS AWARDED

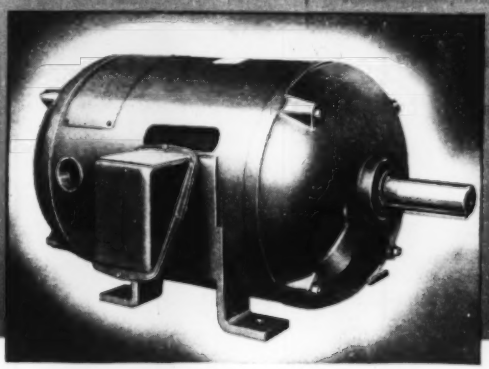
Ala., Anniston—City, paving 14 streets, to Pitts-Douglas Co., Anniston, **$90,023.** CD 12/13/44—ENR 12/28/44.

†California—Public Bldgs. Admin., 720 Phelan Bldg., San Francisco, imprv. 6.362 mi. Mill Creek, San Bernardino National Park, Calif. 68-E, San Bernardino Co., to Hess Constr. Co., Inc., 2303 E. Artesia Blvd., Long Beach **$507,088.** Bids 4/21. CD 4/19—ENR 4/21, under LB.

●**Minnesota**—State Hy. Dpt., St. Paul, gravel base, plant mixed bit. surf. S. P. 5805-08 (TH 61-1) S. P. 5806-10 (TH 61-1) and S. P. 5806-11

NEW ADDITION to the Protected-Type Line...





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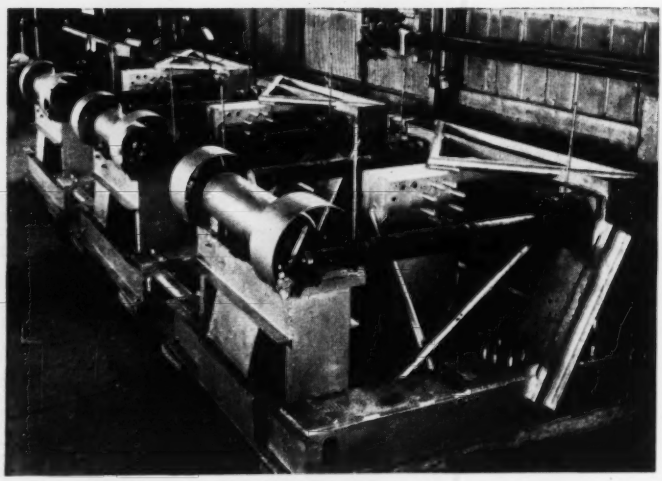


Strength through Design in Tube-Turn welding flanges

Taking the measure of piping fatigue

PIPE lines are *live, dynamic* members of a piping system. They *breathe* with changes in temperature and pressure. And the danger of fatigue failure from pressure shock, thermal shock, and cyclic conditions is ever-present.

More precise information was needed on this subject. So, Tube Turns research engineers set out to get the answers. For the purpose, they designed and built a unique cyclic testing machine to handle full-size piping assemblies under a wide range of temperature, pressure, and corrosive conditions. And on this torture rack they subjected flanged assemblies to reverse bending tests carried on to ultimate failure. Information revealed forms the basis of new designs for greater strength in Tube-Turn welding flanges.

Other piping assemblies, too—welding elbows, mitre bends, manufactured and fabricated tees, pipe bends—have been subjected to punishment more severe than any they would probably face in normal service.

And this perpetual search for greater strength through better design has paid off in the form of realistic, non-theoretical facts providing a sound basis for Tube Turns' manufacturing policies—facts important to anyone interested in getting his money's worth in long life from piping installations.

Tube Turns' research and development organization, finest in the welding fittings industry, is constantly striving for the improvement of present products, the development of new ones. Notable among their recent achievements have been the design of a new type welding tee and the development of aluminum welding flanges.

Ask to be put on the mailing list for Tube Turns' technical periodical, *Piping Engineering*. Paper 6.01, for instance, deals extensively with standard steel flanges. Others give you research findings and additional working information pertaining to piping not generally available in convenient form.

TUBE-TURN

tt

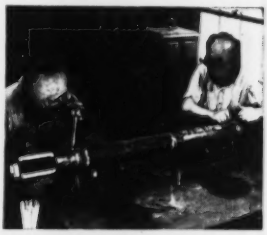
WELDING FITTINGS AND FLANGES

TUBE TURNS, INC.

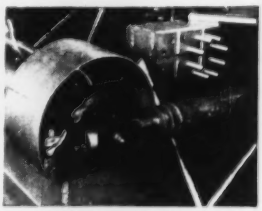
230 East Broadway, Dept. G, Louisville 1, Kentucky

District Offices at New York, Philadelphia, Pittsburgh, Chicago, Houston, Tulsa, San Francisco, Los Angeles

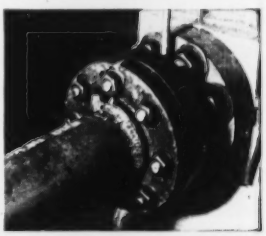
TYPICAL FLANGE ASSEMBLY TESTS



Assemblies were of 4-inch nominal size with 300 pound forged steel flanges and standard weight pipe.



Eccentric crank arm produces up-and-down movement which creates a cyclic bending moment on flange or fitting at opposite end of assembly.



Water spurts from crack in test specimen. Almost invariably, failure occurred in the pipe adjacent to the flange.

Aluminum welding flanges . . . another Tube Turns first! Available in a wide range of types and sizes.

(Continued from page 58)

(TH 61-1) F. I. (5), to Alexander Constr. Co., 4641 Hiawatha Ave., Minneapolis, **$249,808***** gray. base, conc. base, plant mixed bit. surf. S. P. 6502-08 (TH 10-27), S. P. 4901-05 (TH 10-27), S. P. 4901-07 (TH 10-27), and S. P. 4901-09 (TH 10-27), F. 106 (6) and F 154 (4), to Mezarry Bros., St. Cloud, **$178,398*****plant mixed bit. surf. S. P. 6410-04 (TH 71-4), S. P. 6411-04 (TH 71-4) S. P. 3114-04 (TH 71-4) S. P. 3610-05 (TH 71-4) and S. P. 3611-11 (TH 71-4), F. 405 (15), to Haggart Constr. Co., Fargo, N. D., **$139,942** ***gray. base and road mixed bit. surf. S. P. 4207-11 (TH 15-15), S. P. 4208-04 (TH 15-24) and S. P. 7302-07 (TH 15-24) F 344 (4) and F 442 (13), to Anderson Bros., Brainerd, **$91,021.** Grand total $1,259,169. Bids 4/29. CD 4/14—ENR 4/21.

New Mexico—State Hy. Dpt., Santa Fe, reconditioning bit. surf., leveling course, asph. and stone chip sealing 41.092 mi. U. S. 66, between Santa Rosa and Montoya, SP No. FAP 22, Guadalupe and Quay Counties, to Wheeler & Trotz, 2129 E. Lead Ave., Albuquerque, **$67,-967**; reconditioning bit. od surf., reprocessing oil mat, levelling course, asph. and stone chip sealing, 56.703 mi. between Los Lunas and Bernardo U. S. 85, between Belen and Schelle S. R. 6 and U. S. 60, S. P. FAP 121 and 125, SP FAS 54, Valencia and Socorro Counties, to Skousen Constr. Co., 201 Springer Bldg., Albuquerque, **$61,633.** Bids 5/3.

EARTHWORK, WATERWAYS

BIDS ASKED

About May 25

†Kentucky—U. S. Eng., 303 U. S. Court House, Nashville 1, Tenn., clearing, segments, Group 4, Wolf Creek Reservoir, Cumberland River, Serial No. Eng. 40-058-49-83. CD 6/9/41—ENR 6/12/41.

May 27

†Texas—U. S. Eng., 606 Santa Fe Bldg., Galveston, dredging Houston Ship Channel between Morgan Point to mouth of Goose Creek Channel, Galveston and Harris Counties, Inv. No. Eng-41-243-39-294. Est. $385,000.

June 1

†Arkansas—U. S. Eng., 300 Broadway, Little Rock, approx. 260,000 cu. yd. levee embankment and drainage structures on right bank Arkansas River, Cardell's Bottom Drainage Dist., Dardanelle, Yell Co., South of Rulo, Serial No. Eng-03-050-49-61. Extended date. CD 4/27—ENR 5/5.

†Nebraska—U. S. Eng., 601 Davidson Bldg., Kansas City, Mo., levee Unit 513-512- R, Sect. H, south of Rulo, Serial No. Eng-23-028-49-199. CD 4/22—ENR 5/12.

June 7

†Colorado—U. S. Eng., P. O. Box 1538, Albuquerque, N. M., Willow Creek Channel Imprv., Creede, Serial No. Eng-29-005-49-93. Extended date. CD 5/4—ENR 5/12.

†Louisiana—U. S. Eng., foot Prytania St., Zone 9, New Orleans, Gulf Intracoastal Waterway, Mississippi River-Atchaftlaya River Sect. maintenance dredging, west of Harvey, between Harvey, (Mile 0) and Jones Point Cutoff (Mile 14.2), and between Bayou Blue (Mile 50) and (Mile 71.0), Serial No. Eng. 16-047-49-301.

About June 9

†Nebraska—U. S. Eng., 1709 Jackson St., Omaha, Agricultural Levee Unit R-548, Sects. 1 and 2, near Brownsville, Spec. No. Eng-25-066-49-252. Plans deposit $10.

June 9

†Colorado—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, one 56 in. inside diam., welded plate-steel outlet pipe, with wye branch, bends, support rings, flanges, expansion joint, bearing assemblies, erection fixtures, manholes, drain outlets and accessories for outlet works at Platoro Dam, San Luis Valley Proj., Spec. 2665. L. N. McClellan, ch. engr.

†New Jersey—U. S. Eng., 121 N. Broad St., Phila. 1, Pa., reconstruct outer end North Jetty and dredging broken stone and river materials at Manasquan Inlet, Inv. No. Eng-36-109-49-120.

June 14

†California—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing del. f.o.b. cars shipping point or f.o.b. cars Hayfield, transformer oil storage tank for Keswick Switchyard, Central Valley Proj., Spec. 2668. L. N. McClellan, ch. engr.

About June 16

†North Dakota—U. S. Eng., 1217 U. S. Post Office and Custom House, St. Paul 1, Minn., construct Stage 3, embankment closure sect. Baldhill Dam, Sheyenne River, approx. 9 mi. northwest of Valley City, Sect 18, R. 58 W., T. 141 N. CD 5/25/44—ENR 6/15/44.

LOW BIDDERS

●†Florida—U. S. Eng., P. O. Box 1169, Mobile 7, Ala., May 6, navigation lock and fixed crest spillway at Jim Woodruff Dam, Chattahoochee, Serial No. Eng. 01-026-49-106, from B. Berini & Sons, Inc., 73 Montwait St., Framingham, Mass., Walsh Constr. Co., 114½ W. 3 St., Davenport Ia., Ralph E. Mills Co., 410 Ann St., Frankfort, Ky. and Blythe Bros. Co., 2911 Hutchinson Ave., Charlotte, N. C., **$5,252,129** and **$3,462,844** respectively. CD **4/6—ENR 4/28.**

†California—U. S. Eng., 751 S. Figueroa St., Los Angeles, May 5, dredging in Santa Barbara Harbor, Serial No. 04-253-49-71, from Standard Dredging Corp., Central Bldg., Los Angeles, **$139,660.** Est. $140,000.

†South Dakota—Bureau Reclamation, Dpt. Interior, Huron, Apr. 28, 20,000 bbl. bulk portland cement for Angostura Dam, Missouri River Basin Proj., Spec. 2679, from Ideal Cement Co., Denver Natl. Bldg., Denver, Colo., **$53,000,** f.o.b. Superior, CD 4/18—ENR 4/21.

CONTRACTS AWARDED

†Arizona — Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., ten 72 in. diam. flap gates for Pumping Plants 1, 2 and 3, Wellton Mohawk Canal, Wellton Mohawk Div., Gila Proj., Spec. 2617, to Columbia Machine Works, 7 and Carleton Sts., Berkeley, Calif., **$35,955.** Bids 4/21, awarded 5/3. CD 3/22—ENR 3/24.

●†California—U. S. Eng., Bldg. T-7, Gravelly Point, Va., breakwater exten., Crescent City Harbor, Serial No. Eng-04-203-49-12, to Morrison-Knudsen Co., Inc., and Macco Corp., 14409 S. Paramount St., Clearwater, **$3,245,375.** Bids 3/17, awarded 5/5. CD 3/21—ENR 4/7, under LB.

AIRPORTS AND AIRBASES

BIDS ASKED

May 24

†Ill., Chanute Field — HOUSING — U. S. Army, Merchandise Mart, Chicago, Zone 54, family type quarters (2 story row houses), etc., Chanute Air Force Base, Serial No. Eng. 11-032-49-99. CD 10/26—ENR 11/4.

May 25

†Ga., Marietta—U. S. Eng., Post Office Bldg., Savannah, motor service shop at Marietta Air Force Base, Serial No. Eng. 09-133-49-167. Extended date. CD 4/27—ENR 5/5.

†Ga., Marietta—WAREHOUSE—U. S. Eng., Post Office Bldg., Savannah, Group and Squadron Warehouse, Marietta Air Force Base, Serial No. Eng-01-133-49-176. Extended date. CD 4/29—ENR 5/12.

June 7

†W. Va., Charleston—ROADS, etc.—U. S. Eng., 839 W. Broadway, Louisville, Ky., road, walks and utilities for Air National Guard. Plans deposit $15.

On or About June 9

†Fla., Tampa — FAMILY QUARTERS — U. S. Eng., Post Office Bldg., Savannah, Ga., family quarters, MacDill Air Force Base.

June 10

†S. D., Rapid City—RUNWAY—U. S. Eng., 1709 Jackson St., Omaha, Neb., aprons, taxiways, runway extens., runway lighting facilities and utilities for VVHB hangar at Rapid City Air Force Base, Weaver. CD 10/26—ENR 11/11.

LOW BIDDERS

●†Calif., Compton — TACTICAL CENTER BLDG., etc.—U. S. Eng., 751 S. Figueroa St., Los Angeles, Zone 14, May 5, tactical air direction center bldg. and utility bldg., Job No. Eng 04-353-49-62, from John A. Klarquist, 618 S. Western Ave., Los Angeles, **$103,956.** CD 4/13—ENR 4/21.

● Puerto Rico — AIRPORT — Puerto Rico Transportation Auth., San Juan, May 2, grading, drainage sys., clearing Isla Verde, International Airport, from Blythe Mill Co., 2911 Hutchinson Ave., Charlotte, N. C., **$1,590,-348.** CD 4-12—ENR 4/14.

LATIN AMERICA

Mexico, Guadalajara—D. G. P. C. R. P. de la Republica 6, Mexico, D. F., 500 homes for federal employees to Cia. Constructora Valle de Mexico, Guadalajara, Jal. **$500,000.** Awarded 5/6.

PUBLIC BUILDINGS

BIDS ASKED

May 24

North Carolina—Bd. Educ. Columbus Co. R. J. Lamb, chn., Whiteville, 20 units high and elementary schools, septic sewage disposal plant at Artesia, 6 classrooms addn. and septic sewage disposal plant at Hallsboro; 6 classroom addn. and septic sewage disposal plant at Delco; gymnasium at Fair Bluff. Plans deposit $25. Frank W. Benton, Wilson, archt.

May 25

Ont., Peterborough — Blackwell & Craig, archts., Commerce Bank Bldg., Peterborough, 3 story, concrete, steel, brick, nurses residence for Municipality. CD 12/13—ENR 12/23.

May 26

Tex., Denver City—Sligo Independent School dist., Denver City, masonry high school auditorium, alterations, and remodeling existing bldg. $250,000. Plans deposit $25. Buford & Feinberg, 1801 San Jacinto St., Dallas, engrs.

†Va., Warrenton—U. S. Eng., First and Douglas sts., N. W. Wash., 25, D. C., 2 story row houses, colonial family quarters at Vint Hill Farms, Inv. No. 42-080-124 (29) M. Extended date. CD 4/25.

About May 27

†Mass., Westfield—U. S. Eng., Army Base, Boston, Zone 10, motor service bldgs.

May 27

Ia., Woodbine—Trustees Municipal Light Plant, Woodbine, power plant, generating equip., auxiliaries. $75,000. A. S. Harrington, Box 452, Omaha, Neb., engr.

†Mass., Wakefield—U. S. Eng., Army Base, Boston, Zone 10, motor service bldgs., Camp Edwards. Extended date. CD 3/28—ENR 3/31.

Neb., Sidney—Bd. Educ., O. J. Weymouth, supt., Sidney, 1 story North Side School addn. $250,000. Eugene G. Groves, 405 California St., Denver, Colo., engr. and archt.

May 31

Colo., Trinidad—City, power plant bldg., Sect. B, and erecting power plant equip. in place complete. Plans deposit $25. Rocky Mountain Eng. Co., 1441 Welton St., Denver, archts. and engrs. CD 4/14/48—ENR 4/29/48.

June 1

Ark., Harrison—Boone Co., Harrison, 60 bed hospital, $450,000. Wittenberg, Delony & Davidson, Pyramid Bldg., Little Rock, archts. CD 12/8/47—ENR 12/16/47.

Calif., Yreka — Yreka Union Elementary School Dist., Yreka, school incl. 14 classrooms, 2 kindergartens and administration offices, Jackson and Oregon Sts. $400,000. Plans deposit $25. Charles F. Dean, 1521 Eye St., Sacramento, archts. CD 12/26—ENR 1/16.

Colo., Denver—City and County of Denver School Dist. 1, 414 14 St., 2 story, basmt., 70x256 ft. T-shaped, 1 end of T-112 Ft., 19 classroom University Park School addn. Approx. $250,000. Smith, Hegner & Moore, 422 Colorado Bldg., archts. and engrs.

†Conn., Colchester—U. S. Eng., Army Base, Boston, 10, Mass., motor vehicle storage bldg.

●Minn., Duluth—St. Louis Co., F. W. Johnson, purch. agt., Court House, 3 story, basmt., 42x235 ft. and 40x55 ft. wing, reinf.-con. steel hospital No. 10 Ave. E. and 1 St. $1,000,000. Plans deposit $30. A. R. Melander, 603 Alworth Bldg., archt.

N. Y., Plattsburgh—New York State Dormitory Auth., 93 State St., Albany, residence halls and attendant facilities bldg. at State Teachers College. Alvin W. Luman, 58 Marcaret St., archt. ENR 1/2/47.

O., Maple Heights — Maple Heights Bd. Educ., Lee and Broadway Sts., brick, concrete Maple Heights High School addn. at Clement Dr. $625,000. Outcalt, Guenther & Assoc., 13124 Shaker Square, Cleveland, archts. E. Kretch, Erie Bldg., Cleveland, mechanical engr. CD 12/4/47—ENR 12/25/47.

June 6

●Calif., Richmond—City, City Hall, 3 story, 107,524 sq. ft. rein.-con. auditorium and art center with balcony on 3 sides of interior, seating 3,700 persons in Civic Center. $2,-000,000. Plans deposit $50. Milton L. Pflueger, 580 Market St., San Francisco, archt. CD 11/27/45—ENR 1/3/46.

About June 7

●†N. M., Albuquerque—U. S. Eng., P. O. Box 1538, 83 single type residences; 24 unit efficiency apartments; 4 two family housing. Stage IV, Sandia Base, Serial No. 291-49-24. $1,000,000.

†N. H., Franklin—U. S. Eng., Army Base, Boston 10, Mass., garage and utility bldg., Franklin Falls Dam. Se ial No. Eng-19-016-49-89. CD 4 26—ENR 4/28.

June 14

†Kan., Fort Riley—U. S. Eng., 1709 Jackson St., Omaha, Zone 2, Neb., family quarters, 2 story row houses, appurtenances, Pl. Riley, Serial No. Eng. 25-066-49-243. CD 4/25—ENR 5/12.

June 15

†Tenn., Oak Ridge—U. S. Atomic Energy Comm., Administration Bldg., P. O. Box E, Oak Ridge, 2 story addn. to and remodeling of existing Wing E of Oak Ridge Hospital Bldg. No. 1810-T, known as Orins Medical Div. Bldg. Inv. No. 401-49-1-F. Plans deposit $25 from Austin Co., P. O. Box 221.

June 21

†Mass., Boston—U. S. Eng., Army Base, Boston, Zone 10, O. R. C. alterations, addns., Army Base.

LOW BIDDERS

Calif., Manhattan Beach—Redondo Beach High School Dist., 315 N. El Redondo St., Redondo Beach, May 3, Mira Costa High School, incl. site development, 4 classroom wings, library bldg., 3 unit administration bldg., etc., from Turlett Constr. Co., 8240 Esther St., Lotus Beach, **$618,584.** CD 4/14—ENR 4/21.

●Calif., Tulare—Tulare Local Hospital Dist., Box 656, May 4, 2 story, basmt., 73-bed rein.-con. hospital and rein.-con. laundry bldg., from Trewhitt-Shields & Fisher, 926 Parallel St., Fresno, **$1,078,000.** CD 4/5—ENR 4/7.

Ia., Council Bluffs — Independent School Dist., Council Bluffs, Apr. 28, general contract North Broadway Grade School, from Larsen & Sons, 10 N. Main St., **$467,738.** CD 4/4—ENR 4/7.

●Mass., Boston — City of Boston Housing Auth., 10 Post Office Sq., Boston, Apr. 29, veterans housing, Washington and Faure Sts., Hyde Park, from Jefferson Constr. Co., 75 First St., Cambridge, **$1,457,198.** CD 3/18—ENR 3/31.

Mass., Dorchester—City of Boston Housing Auth., 10 Post Office Sq., Boston, Apr. 13, 38 unit veterans housing, Sumner, Willis and Bakersfield Sts.; from S. & A. Allen Constr. Co. Inc., 262 Washington St., Boston, **$459,685.** CD 3/24—ENR 3/31.

Mass., Wareham — Town, Supt. Schools, Wareham, rejected bids May 5, high school alterations, addns., L. B. **$747,390.** CD 3/15—ENR 3/17, under LB.

✦N. M., Hot Springs—Bureau Reclamation, Dpt. Interior, Bldg., 1-A, Denver Federal Center, Denver, Colo., May 5, one 3,000 kva. outdoor-type-to-indoor-type substation for Hot Springs substation. Spec. 2624, Rio Grande Proj. from General Electric Co., 650 17 St., Denver, Colo., **$50,131,** f.o.b. Hatch. CD 4/13—ENR 4/21.

Tex., Houston—Houston Independent School Dist., 1600 Washington St., rehabilitation and addns. to Milby High School, from Thomas Bryan & Assoc., M & M Bldg., **$760,498.** CD 2/2/48—ENR 2/19/48.

CONTRACTS AWARDED

✦Conn., Mystic and Norwich—U. S. Eng., Bldg. 24, Naval Drydock, South Boston, Mass., 2 brick veneer, concrete motor vehicle storage bldgs., Serial No. Eng-06-020-49-4, to John D. McWilliams & Co., Falls Ave., Norwich, **$86,742.** Bids 4/29. CD 4/20.

✦Kan., Wichita—Veterans Admin., Br. Office & Custom House, St. Louis, Mo., plant alterations, boiler augmentation, Veterans Hospital, to P. J. Stephens Co., 301 Armour Blvd., Kansas City, Mo., **$55,823;** steam distr., outside sewers, roads, walks, grading, drainage, to M. K. Eby Constr. Co., Wichita, **$154,005.** CD 2/2—ENR 2/16.

●Mass., Brookline — Town Bldg. Comm., Town Hall, north wing, high school addn., Greenough School and Lowell Bld., to Bibbo Caporaloni, 44 School St., Boston, **$1,009,585.** Bids 3/8, awarded 5/6. CD 3/15—ENR 3/17.

●Mass., Brookline—Town of Brookline Housing Auth., Town Hall, 114 unit veterans housing, Egmont, St. Paul, Dummer and Pleasant Sts., to M. Spinelli & Sons Co., Inc., 79 Milk St., Boston, **$1,107,000.** Bids 4/8, awarded 4/28. CD 4/14—ENR 4/21, under LB.

Mass., Canton—Town School Dpt., Canton, high school, to James S. Mogavero, 168 Mystic Ave., Medford, **$540,400.** Bids 3/7, awarded 4/22. CD 3/15—ENR 3/17, under LB.

●Mass., Gloucester—City of Gloucester Housing Auth., Gloucester, veterans housing, Babson Farm off Washington St., to G. L. Rugo & Sons, Inc., 80 Boylston St., Boston, **$1,152,-171.** Bids 4/15, awarded 4/21. CD 3/25—ENR 3/31.

●Mass., Malden—City of Malden Housing Auth., City Hall, Housing Proj. 200-1, Linden Sect., to G. L. Rugo & Sons, Inc., 80 Boylston St., Boston, **$1,088,321.** Bids 4/18. CD 3/31—ENR 4/7.

●Mass., Taunton—City Housing Auth., City Hall, Housing Proj. 200-1, Ingell and Main Sts., to C. J. Maney Co. Inc., 24 Dane St., Somerville, **$1,083,000.** Bids 4/29, awarded 5/2. CD 4/14—ENR 4/21.

Mass., Woburn—City of Woburn Housing Auth., City Hall, 66 unit veterans housing, Maple and Webster Sts., to Thomas Worcester, Inc., 84 State St., Boston, **$641,808.** Bids 4/15, awarded 4/25. CD 3/31—ENR 4/7.

Va., Winchester—Frederick Co., Winchester, James Wood High School, near here, to English Constr. Co., Altavista, **$877,882.** Bids 4/26. CD 3/22—ENR 3/25, under LB.

Wis., Winneconne—Joint School Dist. 1, Winneconne, general contract 1 story, 60x141 ft., 6x141 ft. and Carlson & Hiob 1 and 2 story, 60x87 ft. addns. to C. R. Meyer & Son, Oshkosh, **$339,-863.** Bids 4/20. CD 4/13—ENR 4/21.

Ont., Ottawa — Dpt. Mines & Resources, Ottawa, cont., plant, Ottawa Mines Bureau, Booth St., to Sherritt-Gordon Mines Ltd., 25 King St. W., Toronto. Approx. **$100,000.**

COMMERCIAL BUILDINGS

BIDS ASKED

May 31

Tex., San Antonio — Salvation Army, 4619 Broadway, concrete frame and fdn., hollow tile maternity hospital, $250,000. Atlee B. & Robert M. Ayres, Transit Tower, archt. Matthews & Kerner, Transit Tower, structural engrs. Hayes & Rowell, Transit Tower, mechanical engrs. CD 11/11—ENR 12/16.

About June 1

S. C., Greenville—Plaza Apartment, Inc., c/o Wm. Lakes, Bissett, Carlisle & Wolff, 1302 Main St., Columbia, apartment development. Approx. $250,000.

June 10

La., New Orleans—Touro Infirmary, 3516 Prytania St., 6 story, 64x120 ft. brick addn. addns. Plans deposit $50. Dreyfous & Seiferth, Audubon Bldg., archts. CD 1/7/48—ENR 1/22/48.

Bids Asked

Tex., San Antonio — A. A. Lowery, Travis Bldg., 132 dwellings, $528,000. O'Neill Ford, c/o Willow Way, Jerry Rogers, c/o Willow Way, P. L. Shoop, R. H. Rogers, Olmos Dr.; and DeHaven Pitts, Maverick Bldg., archts. Wm. Orrison & Co., Travis Bldg., engrs. CD 3/16—ENR 3/31.

SOON LETS CONTRACT

Mass., Athol—Athol Memorial Hospital, G. P. Holland, chrn. Bldg. Comm., 435 Main St., soon lets contract 3 story, bsmnt., brick, hospital, $500,000. James H. Ritchie & Assoc., 38 Newbury St., Boston, archts. Hayden, Harding & Buchanan, Park Sq. Bldg., Boston, engrs.

Mass., Concord—Emerson Hospital, Concord, soon lets contract 3 story, bsmnt., brick hospital addn., alterations, $670,000. Perry-Shaw & Hepburn, 31 St. James Ave., Boston, archts. Cleverdon-Varney & Pike, 120 Tremont St., Boston, structural engrs. CD 2/3/47 — ENR 2/13/47.

●O., Cleveland—St. Ann's Maternity Hospital, 3409 Woodland St., soon lets contract 7 story, 60x87 ft., 70x53 ft., 53x86 ft., 45x53 ft. (in form of cross) Maternity Hospital, $1,200,000. Cutting & Citresi, 2074 E. 36 St., archts. CD 11/26—ENR 12/9.

LOW BIDDERS

Colo., Denver — Rocky Mountain Hospital Assn., Ralph B. Mayo, 2221 Downing St., 2 story, bsmnt., 50-bed, 74x207 ft. osteopathic hospital, from Mead & Mount Constr. Co., Denver ver National Bank Bldg., Denver, **$324,000.** CD 4/8—ENR 4/21.

Fla., Tampa—Sisters of St. Joseph, Allegheney, N. Y., May 2, 73 bed hospital addn., from R. E. Charson, Inc., 2000 13 Ave. N., St. Petersburg. Approx. **$350,000.** CD 4/27—ENR 5/5.

Mass., Hyannis—Cape Cod Hospital Admin. Office, Hyannis, Apr. 21, hospital addn., alterations, from Theodore Lorangee & Sons, 404 Nash Rd., New Bedford, **$878,202.** CD 3/25—ENR 3/31.

Tex., Bryan — College Ave. Baptist Church Congregation Bryan, May 3, church, from L. V. Halton, Bryan. **$366,986.** Est. $250,000. CD 4/19—ENR 4/21.

CONTRACTS AWARDED

Ala., Birmingham—Ridgewood Apartments, Inc., c/o Greer, Holmquist & Chambers, archts., Chamber of Commerce Bldg., 48 apartment units, to Realty Constr. Co., 2501 Randolph Pl., Approx. **$250,000.**

Ala., Muscle Shoals—West Washington Corp., c/o contractor, 35 homes, to F. R. Daugette, 1500 Woodland Ave. S. W., Birmingham, Approx. **$250,000.**

Calif., Antioch—Russell Cataline, 1050 Los Medanos St., Pittsburg, 100 residences (3rd units) in Sycamore Park Unit 3. Owner builds. **$500,000.**

La., New Orleans—Mater Dolorosa Church, c/o contractor, church addn., to L. F. Favret, 937 Gravier St., Approx. **$250,000.** Bids 4/20. CD 3/21—ENR 3/24.

●Mass., Arlington—Moore Realty Corp., R. L. Moore, Arlington, 8 apartments, 155 units River St., to G. DeVries, 139 Westminster Ave., Arlington, approx. **$1,000,000.** Arthur G. Mamaselian, 30 Huntington Ave., Boston, archt.

Mass., Clinton—Clinton Hospital Assn., Clinton, Walter P. Bowers Memorial Hospital, to Granger Contg. Co. Inc., 306 Main St., Worcester, **$529,900.** Bids 3/30, awarded 4/15. CD 4/7—ENR 4/14, under LB.

Mo., Overland (St. Louis, Zone 14, P. O.)—Frann Constr. Co., 2503 Wismer Rd., fifty-six 1 story, 24x34 ft., frame, concrete block houses, Margo Lane, and Edmundson Rd., separate contracts. Approx. **$280,000.**

Mo., St. Louis—St. James Catholic Parish, Rev. P. J. O'Connor, pastor, 2 story, 35x92 ft. and 28x53 ft. L-shaped parochial school, incl. classrooms, locker room, etc., 3458 Bamm Ave., to Michael J. Lawlor, 5632 Terry Ave., Zone 20. Bids 4/22. CD 4/22—ENR 4/28.

Tex., Fort Worth — Ridglea Housing Corp., c/oo Camp Bowie Blvd., 72 one story residences in Ridglea West Addn., own forces. Approx. **$375,000.** Jim D. Vowell, Electric Bldg., archt.

Tex., San Antonio—Sisters of Charity of the Incarnate Word, 4707 Broadway, brick school and 2 and 3 story masonry dormitory, off Hildebrand Ave. at Mt. Erin, north of Alamo Stadium, to Walsh & Burney, 928 N. Flores St., Approx. **$300,000** and **$275,000** respectively. CD 2/25—ENR 3/10.

INDUSTRIAL BUILDINGS

BIDS ASKED

●Mich., Lancaster—PLANT—Diamond Power Spec. Co., 16340 Oakland Ave., Detroit, 1 story, masonry plant and office, also railroad spur, 2 mi. from here, $2,000,000. Austin Co., 16112 Euclid Ave., Cleveland, 6, engr. and archt.

Tex., San Antonio—SERVICE STATION—Sinclair Refining Co., 1205 S. Laredo St., service stations "Master" type, S. Flores and Compton Sts., $75,000; Mission and Mitchell Sts., $75,000; Commerce and Pine Sts., $75,000. CD 10/24/46—ENR 11/7/46.

SOON LETS CONTRACT

N. C., Monroe—HEADQUARTERS—Union Electric Membership Corp., Monroe, soon lets contract headquarters bldg. Plans deposit $25. M. R. Marsh, Builders Bldg., engr. **Correction**—location of project. CD 5/4—ENR 5/12, under N. C., Charlotte.

Tex., Austin—SALES and SERVICE—Capitol Chevrolet Co., 224 E. 5 St., soon lets contract masonry auto bldg., service, display, parts, storage. $85,000. Arthur Fehr & Charles Granger, 502 E. 5 St., engrs.

Ont., Harrow — GRAIN ELEVATOR — The Harrow Farmers Co-operative, soon lets contract concrete grain elevator, $50,000. CD 4/3/46.

CONTRACTS AWARDED

Calif., Hayward—FACTORY—Atlas Imperial Diesel Engine Co., 1000 19 Ave., Oakland, 2nd portion glass factory addns., to Larsen & Larsen, 629 Bryant St., San Francisco. Approx. **$135,000.** Douglas, McLellan & Assoc., 816 W. 5 St., Los Angeles, archts. H. M. O'Neil Co., 610 16 St., Oakland, engrs. CD 6/4/48—ENR 6/17/48.

Calif., Fresno — SALES and SERVICE — Getchell Truck Sales, 2401 Stanislaus St., brick, steel truss truck sales and service, to L. H. Hansen & Sons, 313 Palm Ave. Approx. **$75,000.**

Conn., Danbury—FACTORY—Danbury Industrial Corp., 205 Main St., 2 story, 60x160 ft. brick, steel, concrete factory addn., Shelter Rock Rd., to Hewlett Constr. Co., 600 Lindley St., Bridgeport, and Abernard J. Dolan, 207 Greenwich Ave., Bethel. Approx. **$125,000.**

Fla., Jacksonville — WAREHOUSE, etc. — Horne-Wilson, Inc., 214 E. Bay St., rein.-con. warehouse, showrooms, and office for distr. plumbing, pipe and industrial supplies, incl. complete air-conditioning, to O. F. Woodcock, 420 W. Monroe St., Zone 1, **$160,000.** Awarded 4/23. Jefferson D. Powell, Atlantic Bank Bldg., archt.

Fla., Lake Wales—MILL—Botany Mills, Inc., c/o W. O. Starklin, archt., 605 W. Lafayette St., Tampa, botany mill, to George W. Gilman, Lake Wales. Approx. **$85,000.**

Fla., Miami—WAREHOUSE, etc.—American Oil Co., 2200 N. W. 24 St., warehouse and office. Owner builds. Approx. **$68,000.**

Fla., Miami—WAREHOUSE—G. Goldberg, c/o contractor, warehouse, to Chalker Constr. Co., 343 S. W. North River Dr. Approx. **$100,000.**

Ia., Des Moines—GRAIN ELEVATOR—Farmers Grain Dealers Assn. of Iowa, 1161 Walnut St., grain elevator, to A. H. Neumann & Bros., Hubbell Bldg. **$530,000.** CD 3/25—ENR 4/7.

Minn., Red Lake Falls—GARAGE, etc.—Red Lake Electric Co-operative, O. Overmeun, mgr., garage, office, warehouse bldg., to Sauers Constr. Co., 1550 Larpenteur Ave. W., St. Paul, **$97,392.** Bids 3/31. CD 3/16—ENR 3/24.

Mo., Springfield—PLANT—M. T. A. Milling Co., 505 Boonville St., brick, steel concrete plant, to Seth E. Glem & Assoc., Land Bank Bldg., Springfield, **$500,000.** Bids 2/15. CD 2/2—ENR 2/10.

Nev., Gerlach—FACTORY—U. S. Gypsum Co., 300 W. Adams St., Chicago, Ill., steel frame plasterboard factory, to Dodge Constr. Co., N. Maine St., Fallon. Approx. **$70,000.** CD 3/31—ENR 3/24.

●O., Ashtabula—PLANT—National Distillers Chemical Corp., 120 Broadway, New York, N. Y., design and construction metallic sodium plant, producing 35,000,000 lbs. a year, to Kerr, Lewis, Jones & William St., New York, N. Y. Approx. **$10,000,000.**

Tex., Corsicana—FACTORY—Tex Sun Glove Co., Corsicana, glove factory unit, own forces. **$75,000.**

Tex., San Antonio—SERVICE STATION—Sinclair Refining Co., 1205 S. Laredo St., service station, Nogalitos, Rosslyn, S. Presa and Hampshire Sts., to H. Weber, Gunter Bldg., **$75,000.** CD 4/19—ENR 4/28, under LB.

Utah, Salt Lake City—FOUNDRY—Lundin & May Foundry Co., Inc., 454 W. Fifth North St., 40x153 ft. foundry addn., force account. **$70,000.** Wm. E. Nelson, Utah Savings & Trust Bldg., archt.

Ont., Hamilton—FACTORY, etc.—Brill Shirt & Neckwear Ltd., 240 Richmond St. W., Toronto, 1 story, bsmnt. 30x126 ft. brick, concrete factory and office, concrete fin. James St., between Macaulay and Picton Sts., to James Kemp Constr. Co., 121 Vanstimart St., Approx. **$81,900.** J. Brunel, 463 Spadina Ave., Toronto, archt.

Que., Montreal—FACTORY—Quebec Enterprises Ltd., 204 W. Notre Dame St., concrete, steel, brick factory, St. Laurence Blvd. Approx. **$125,000.** M. W. Roth, 204 W. Notre Dame St., archt. Archer & Dufresne, 25 St. Louis St., Quebec City, engrs.

UNCLASSIFIED

BIDS ASKED

May 25

✦Ill., Rock Island—STAIR ENCLOSURES—U. S. Army, Clock Tower Bldg., fire-resistant stair enclosures, Clock Tower Bldg., Rock Island, Serial No. Eng. 11-117-49-71.

Md., Baltimore — FIELD HOUSE, PLAYGROUND, etc. — Mayor & City Council, City Hall, playground, field house, at city hospital, Pratt and Drew Sts. Plans deposit $20. R. E. Williams, 410 Municipal Bldg., bld. constr. engr. CD 12/3/47—ENR 12/25/47.

May 26

North Dakota — RURAL DISTRIBUTION LINES — Mountrail Electric Cooperative, Stanley, labor and materials, 264 mi. rural distr. lines D-1 Sect., Mountrail Co. $250,000. Ulteig Eng. Corp., 110½ Broadway St., Fargo, engr. CD 5/27/48—ENR 6/17/48.

May 27

New York—DC CONNECTIONS—Bd. Transportation, 250 Hudson St., New York, Zone 13, N. Y., furnishing, installing DC connections and track bonding for line D—Hillside Ave. Exten. from 178 St. to D4 Pl., Queens Boro. CD 2/1/43—ENR 2/4/43.

May 31

Texas—RURAL DISTRIBUTION LINES—Comanche Co. Electric Co-operative Assn., c/o W. S. Clark, pres., Comanche, 248 mi. rural distr. lines, Comanche, Callahan, Brown, Mills, Erath, Hamilton and Eastlands Counties, $265,000. Plans deposit $25. Freese & Nichols, 407 Daniciger Bldg., Fort Worth, engrs. CD 12/27—ENR 1/20.

†N. C., Fort Bragg—UNDERGROUND CONDUIT—U. S. Eng., 308 Customhouse, Wilmington, construct underground conduit for telephone cables, Inv. No. Eng-31-075-49-60.

SOON LETS CONTRACT

Kansas—RURAL DISTRIBUTION LINES—Smoky Hill Electric Co-operative Assn., Ellsworth soon lets contract 418.81 mi. rural distr. lines, Russell, Lincoln, Rice, Saline and Ellsworth Counties, $425,000. Flora Eng. Co., 501 Jackson St., Topeka, engr. CD 3/31—ENR 4/8.

Nebraska—RURAL DISTRIBUTION LINES—Twin Valleys Electric Membership Assn., Cambridge, soon lets contract labor and part of materials, 143.44 mi. rural distr. lines, Furnas and Harland Counties, $55,000. Flora Eng. Co., 501 Jackson St., Topeka, Kan., engr. CD 4/5—ENR 4/21.

LOW BIDDERS

Calif., Fresno—LIVESTOCK BLDG.—State Div. Architecture, P. Wks. Bldg., Sacramento, May 3, 150x240 ft. livestock bldg. with pipe column supports, corrug. metal roof for 21st District Agricultural Assn., from Harris Constr. Co., Box 169, Fresno, $135,518. CD 4/19.

Calif., Los Angeles—PLAYGROUND, etc.—City Park & Recreation Comn., Los Angeles, Apr. 28, Poplar Playground and Clubhouse, from Mandelaek Constr. Co., 1837 Victory Blvd., Glendale, $67,299. Est. $70,000. Frederick Emmons, 9304 Santa Monica Blvd., Beverly Hills, archt.

Calif., Oakland—PLAYFIELD—City, City Hall, May 3, playfield on Lockwood School grounds, from California Builders Co., 5525 Marshall St., $70,468.

●Calif., San Francisco—FIELD HOUSES, etc.—Recreation Comn. of City and San Francisco Co., City Hall, rejected bids Apr. 12, 4 reinf.-con. partial 2 story field house, 1 wood frame gymnasium bldgs. at Potrero Hill Playground, St. Mary's Playground, Oceanview Playground and Sunset Playground, L.B. $1,-350,873. CD 4/19—ENR 4/28, under Lit.

†Colorado—TRANSMISSION LINES—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, constr. Brush-Yuma 69 kv transmission line, Morgan, Washington and Yuma Counties, Spec. 2555, Schedule 1, aluminum, and Wiggins-Hyt, 115-kv transmission line, Morgan Co., Spec. 2570, Schedule 1, aluminum, from R. N. Campsey Constr. Co., 2520 Leydon St., Denver, $273,839 and $88,394 respectively; Flatiron-Greely 115kv transmission line, Weld Co., Spec. 2551, Schedule 1, aluminum, from J. & J. Constr. Co., 1 National Bldg., Oklahoma City, Okla., $234,085. CD 4/26—ENR 4/28.

Minnesota—RURAL DISTRIBUTION LINES—Minnesota Valley Co-operative Light & Power Co., Montevideo, rejected bids Apr. 15, 302 mi. rural distr. lines, Chippewa, Lynn, Yellow Medicine, Redwood, Lacqui Parle and Renville Counties, Lit. $387,110. Est. $375,000. CD 3/29—ENR 4/7.

†N. C., Camp Lejeune (Br. New Bern)—FIELD HOUSE—Bureau Yards & Docks, Marine Barracks, Camp Lejeune, Apr. 29, field house, from Skinner & Ruddock, 72 State St., Charleston, S. C. $725,865. CD 3/17—ENR 3/24.

CONTRACTS AWARDED

Okla., Oklahoma City—ATHLETIC FIELD—Bd. Educ., 400 N. Walnut St., athletic field and track construction at Taft High School N. W. 27 St., to Southern Constr. Co., 1405 W. Reno St., $52,135. Est. $56,000. Awarded 3/3. V. G. Thompson, 1100 W. Main St., engr.

Pennsylvania—RADIO COMMUNICATIONS NETWORK—Dpt. Forests & Waters, Harrisburg, installing radio communications network for Federal-State Flood Forecasting Service in Susquehanna River Basin, to Raymond Rosen & Co., 32 and Walnut St., Phila., $275,450.

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CONSTRUCTION REPORTS-Second Section

Third Section Construction Reports on page 76

WATER SUPPLY

BIDS ASKED

May 24

†Illinois—U. S. Engr., 826 U. S. Court House & Custom House, St. Louis, 1, Mo., removing 6,000 ft. 18- and 20-in. waterlines, across Chain of Rocks Canal, Granite City and vicinity, Madison Co.

May 25

Va., Charlottesville—City, at office James E. Bowen, Jr., city mgr., City Hall, Dec. 1, Proposal 1, chemical bldg. and equip., mixing basins and equip., coagulation basins, piping and electrical connections, outside piping, water storage tank, etc.; Proposal 2, excavation. Plans deposit $40. Wiley & Wilson, 905 Peoples Bank Bldg., Lynchburg, consult. engrs. CD 1/22/48—ENR 2/8/48.

May 26

Ill., Clay City—Village, Jess R. Hunley, Jr., mayor, Village Hall, Sects. I to VI water and sewer extens., water, sewage plant and elevated tank improvs., incl., 9,600 lin. ft. 2 and 4 in. watermains, 600 lin. ft. 8 in. sewers, 2 manholes, rehabilitation, painting elevated water tanks, depth gauge and target, rehabilitate valves and controls, water treatment plant; high service water meter and rehabilitate rotary distributor at sewage plant. Plans deposit $10. Russell & Axon, 408 Olive St., St. Louis, Mo., engrs.

Mass., Boston—Commonwealth of Mass., Metropolitan Dist. Comm., 20 Somerset St., Contr. 163, furnishing, laying water pipes, Stoneham and Melrose. Approx. $100,000. Plans deposit $5. CD 5/12/44—ENR 6/1/44.

O., Clyde—Village Bd. Pub. Affairs, reservoir, filtration plant, pump station, storage tank and downtown office bldg. for Water Dpt. $600,000. Wilson W. Kohli, Tiffin, engr.

May 27

Ont., Mattawa—Mayor, pumphouse, concrete reservoir, watermains for Municipality, $70,000. Plans deposit $10. Sutcliffe Co. Ltd., New Liskeard, engr.

May 31

N. Y., Rotterdam—Bd. Water Comrs., Assembly Hall, Town Hall, Vineywood Ave., WW sys., Exten. No. 3 to Rotterdam Water Dist. No. 1. Plans deposit $25. Keis & Halroyd, 237 Broadway, Troy, consult. engrs.; adv. ENR 5/19. CD 1/2/47—ENR 1/16/47.

June 1

Calif., Los Angeles—Metropolitan Water District of Southern California, 306 W. 3 St., Victoria St. Lateral, 2.8 mi. 54 in. pipe, Alt. I, lock-joint steel cylinder, Alt. II, welded steel pipe, concrete lined and coated. Julian Hinds, ch. engr.

LOW BIDDERS

●**Calif., San Diego**—City, Civic Center Bldg., May 10, 66 m.g.d. Alvarado Filtration Plant, from M. H. Golden Constr. Co., 3485 Noell St., **$2,232,721.** CD 3/31—ENR 4/7.

†Tenn., Memphis—Navy, S. P. O. Box 97, Apr. 19, Fairfax Pump Station, Wolf River and Nonconnah Creek, Eng-40-041-49-107, from Hyde Constr. Co., Jackson, Miss., **$257,557.** Est. $269,428.

Tex., Houston—Harris County Water Control & Improvt. Dist. 14, c/o G. S. Pettigrew, 4537 Avondale St., Apr. 28, Contr. 1, WW distr. sys., from A. S. Koehler, Shell Bldg., **$162,119,** est. $150,000***Contr. 3, 100,000 gal. iron elevated steel tank and tower, from Pittsburgh-Des Moines Co., Interstate Bldg., Dallas, **$32,200,** est. $30,000***Contr. 7, 2 water supply wells, equipped from Texas Water Wells, Inc., 951 McCarty St., **$30,693,** est. $75,000. CD 4/7—ENR 4/21.

Tex., Longview—City, J. A. Giddings, mgr., Apr. 27, water treatment equip. and filter plant equip., from Infilco, Inc., 325 W. 25 Pl., Chicago 16, Ill., **$71,141,** pump equip. from Allis-Chalmers, 1719 McKinney St., Houston, **$38,131.** Julian Montgomery, 602 West Ave., Lubbock, engr. CD 6/2/48—ENR 6/24/48.

Alaska, Anchorage—City, City Hall, Apr. 28, 11,600 ft. water distr. mains, from Morrison-Knudsen Co., Inc., 919 Broadway, Boise, Idaho, **$615,000.** Flora Eng. Co., Lassar-Sooh Bldg., engr.

CONTRACTS AWARDED

Calif., Manhattan Beach—City, 1400 Highland Ave., pump house and reservoir, to H. M. Hongola, 1120 Atchinson St., Pasadena, **$135,000.** O. A. Gierlich, 1400 Highland Ave., engr. CD 4/29/48—ENR 5/13/48.

Colo., Denver—Bd. Water Comrs., City and County Bldg., Denver, installing 14,137 ft. waterlines, incl. 14,497 ft. 24-in. 42 lb. DI pipe, to Hutcheson Constr. Co., 4101 E. Evans Ave., **$111,657.** Bids 4/28, awarded 5/3. CD 5/3—ENR 5/5.

La., Harvey—Second Jefferson Drainage Dist., Marrero, pump, plant extens., to Keller Constr. Co., 7900 Palm St., New Orleans, **$111,247.** Bids 4/18, awarded 4/26. CD 4/26—ENR 4/28, under LB.

N. J., Camden—City, City Hall, well sys. repairs and reconditioning, to Layne New York Co. Inc., 92 Liberty St., New York, N. Y., **$28,000.** CD 8/16/46—ENR 9/5/46.

Tenn., Kingsport—Kingsport-Long Island Utility Dist., c/o contractor, W. W. improvs., to Bush Building Co., 805 8 Ave. N. Nashville, **$119,000.** Bids 4/16.

SEWERS, WASTE DISPOSAL

BIDS ASKED

May 23

N. Y., New York—Dpt. P. Wks., Municipal Bldg., Zone 7, thermal spalling of clogged diffuser plates in aeration tanks at Wards Island Sewage Treatment Works. Plans deposit $5. CD 2/1/43—ENR 2/4/43.

May 24

N. Y., New York—President Bronx Boro, 851 Grand Concourse, Zone 51, sewer, appurtenances, Dean St. between Stadium and Layton Aves., Fish Ave. between Gun Hill Rd. and Burke Ave., Boring Ave. between Adee and Arnow Aves., etc.

May 26

Fla., Dunedin—City, sanitary sewer improvs. Plans deposit $20. Wiedeman & Singleton, Citizens & Southern National Bank Bldg., Atlanta, Ga., engrs. CD 6/26/46—ENR 8/8/46.

May 27

Ont., Mattawa—Mayor, sewers for Municipality, $55,000. Sutcliffe Co. Ltd., New Liskeard, engr.

May 31

Tex., Dallas—City, Earl Goforth, secy., City Hall, Main and Harwood Sts., sanitary sewers, Northwest Hy. Shadywood, Briarwood, Lilac and Farquahar Lanes, Horseshoe Trail and Stonegate Rd. $75,000. L. B. Houston, city engr. CD 12/13/45—ENR 12/27/45.

June 1

Calif., Los Angeles—City, Bd. P. Wks., 153 City Hall, 200 ft. stack rein.con. for filter dryer bldg., inner shell lined with acid proof brick, 75 ft. high, heating proof, Hyperion Activated Sludge Plant, $200,000. Extended date. Samuel Lundeen, 400 Rowan Bldg., Los Angeles, archt. CD 5/2—ENR 5/5.

Pa., Susquehanna Twp.—Susquehanna Twp. Auth., c/o H. A. Levan, 25 N. Front St., Harrisburg, sewerage sys. and pumping station, $800,000. Howard A. Levan, c/o owner, engr. CD 4/18/46—ENR 5/2/46.

Bids Asked

Pa., Bloomsburg—Town, Town Hall, sewage disposal plant, $350,000. Extended date. Gannett, Fleming, Corddry & Carpenter, 600 N. 2 St., Harrisburg, engrs. CD 4/6—ENR 4/21.

Pa., Danville—Danville Boro, Danville, disposal plant and sewerage sys. $300,000. Extended date, Gannett, Fleming, Corddry & Carpenter, 600 N. 2 St., Harrisburg, engrs. CD 4/6—ENR 4/21.

Pa., Phila.—United Engineers & Constructors, Inc., engrs., 1401 Arch St., sewers for General Electric Co., 6901 Elmwood Ave. Approx. $50,000.

Tex., Houston—Southcrest, Inc., Union Natl. Bank Bldg., Sect. 2, sanitary sewers, $90,000; storm sewers, $60,000. CD 4/28.

LOW BIDDERS

Calif., San Jose—City, City Hall, Apr. 25, Sanitary Sewer Separation Project Unit 3, incl. 4.8 mi. concrete sanitary storm sewers, from Associated Electrical & Mechanical Corp., 233 Clara St., San Francisco, **$153,675.** CD 4/6—ENR 4/7.

Fla., Winter Haven—City, May 2, 49,100 lin. ft. 6- to 21-in. vitr. clay sewer lines, from J. H. Browning, Clearwater, **$222,180;** sewage treatment plant, from Coleman & Frye, Clewiston, **$129,612. (Correction**—low bidders), CD 5/9, under LB.

●**Ill., Chicago**—City of Chicago, Dpt. Purchases, Contracts & Supplies, City Hall, May 3, auxiliary outlet sewers, Roscoe St., from John C. Tully, 226 W. Madison St., **$1,069,161.** CD 4/27.

Mass., Boston—Metropolitan Dist. Comm., 20 Somerset St., May 5, pump equip., sewage pump plant, Deer Island Pumping Station Contr. 133, from Blakeslee-Rollins Corp., 6 Beacon St., **$173,965.** CD 4/27—ENR 4/28.

Mass., Braintree—Town, Sewer Dpt., Town Hall, Apr. 15, sanitary sewers, various locations, from Joseph Butera Constr. Co., 34 Warwick St., Woonsocket, R. I., **$114,837.**

Tex., Houston—Harris County Water Control & Improvt. Dist. 14, c/o G. S. Pettigrew, 4537 Avondale Rd., Apr. 28, Contr. 2, sewer collection sys., from M. F. Fischer & Son, Fredericksburg Rd., San Antonio, **$332,710,** est. $545,000; Contr. 4, sewage treatment plant, from A. S. Koehler, Shell Bldg., **$79,280,** est. $150,000. CD 4/7—ENR 4/21.

Tex., McAllen—City, City Hall, rejected bids May 5, storm sewers, L. B. **$157,528,** Sigler, Clark & Winston, P. O. Box 428, Weslaco, engrs.

CONTRACTS AWARDED

Calif., Walnut Creek—Central Contra Costa Sanitary dist., 1822 Diablo Blvd., sanitary sewer, sewage lift station for Local Improvt.

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Dist. 10, to Associated Electrical Mechanical Corp., 233 Clara St., San Francisco, **$225,979.** Bids 4/28. CD 4/20.

Kan., Salina—City, City Hall, sewage disposal wks., to Brown & Brown Inc., and Johnson Bros. Constr. Co., Salina, **$348,000.** Est. $386,272. Bids 4/25. CD 4/5—ENR 4/7.

●**Ore., Portland**—City, City Hall, 3.25 mi. 8 ft. concrete lined sewer tunnel for Peninsula unit, to Peter Kiewit Sons Co., 1024 Omaha Natl. Bank Bldg., Omaha, Neb., **$2,589,133.** Bids 4/26, awarded 5/5. CD 4/28—ENR 5/5, under LB.

Pa., Corry—City, Municipal Bldg., 2,000 ft. 60 in. rein.-con. drain, 6 to 8 manholes, 1,200 ft. open ditch, to Fred J. Donovan, Titusville, **$70,317.** Est. $75,000. CD 9/21/45—ENR 9/27/45.

Pa., Phila.—Dpt. P. Wks., City Hall Annex, storm relief sewer Wingohocking St. to Joseph Lombardi & Sons, 1231 S. Broad St., **$854,476.** Bids 4/28. CD 4/13—ENR 4/21.

R. I., Providence—State and Providence Plantations, F. A. Adams, purch. agt., State House, Providence, Contr. 7, Blackstone Valley Intercepter, Sect. A, Bucklin Brook Branch Intercepter Pawtucket and East Providence, to Gil Wyner Co., Inc., 12 Newland St., Malden, Mass., **$681,320.** Bids 4/20. CD 4/21—ENR 4/28, under LB.

BRIDGES

BIDS ASKED

May 31

N. Y., Syracuse—George A. Noren, ch. engr, New York Central R. R. Co., 466 Lexington Ave., New York, Zone 17, eliminating grade crossings of New York Central and Delaware, Lackawanna & Western Railroads and Hiawatha Blvd. Plans deposit $10. CD 10/11/44—ENR 10/19/44.

June 3

D. C., Wash.—Dist. Comrs., District Bldg., 14 St. and Pennsylvania Ave., Zone 4, constr. rein.-con. bridge deck, incl. roadway and sidewalk slabs for superstructure of East 14 Street Bridge over Potomac River. Plans deposit $25; adv.: ENR 5/19. CD 1/27/44-2/10/44.

SOON LETS CONTRACT

N. C., Morehead City—Beaufort-Morehead R. R. Co., A. T. Leary, lessee, Beaufort, at Bert Macon Hotel, Morehead City, soon lets contract altering movable span in Newport River Bridge, from 51 to 80 ft. Plans deposit $25. Carr & J. E. Greiner Co., Durham, engr.

LOW BIDDERS

Maryland—State Hy. Dpt., Baltimore, Apr. 26, steel beam, concrete bridge over Choptank River, and relocation of State Rt. 313, at Greensboro, incl. five 52 ft. spans, 263 ft. long, 30 ft. roadway, 3 ft. safety curb each side, concrete piers on untreated timber, piles and pedastal spill-thru type abutments supported on timber piles. Contr. No.125-21215, Caroline Co., from George & Lynch, 18 and Broom Sts., Wilmington, Del., **$177,710.** CD 4/13—ENR 4/21.

Michigan—State Hy. Dpt., Lansing, Apr. 28, bridge carrying M-89 relocated over, Kalamazoo River, Allegan Co., from L. W. Lamb, Holland, **$167,856***grade separation carrying West Grand Blvd. over John C. Lodge Expressway, Wayne Co., from W. J. Storen Co., 2411 14 St., Detroit, **$495,225***** rein.-con. steel bridge carrying M 115 over Manistee River, Wexford Co., from Johnson-Greene Co., 616 Ann Arbor Trust Bldg., Ann Arbor, **$74,499.** CD 4/15—ENR 4/21.

N. J., Bridgeton—Cumerland Co., Bridgeton, May 10, Commerce St. Bridge, from Ell-Dorer Constr. Co., 644 Nye Ave., Irvington, **$157,493.** CD 4/21—ENR 4/28.

Texas—State Hy. Comm., Austin, Apr. 27, 1.571 mi. Neches River bridge, approaches, Hy. U. S. 84, Anderson and Cherokee Counties, from Yillig Constr. Co., Fishtrap Rd., Dallas, **$165,786;** 5 rein.-con. bridges, approaches, Hy. 7, F 1092 (2), Falls Co., from Davis-Pace Co., Dallas, **$285,513.** CD 4/6—ENR 4/14.

CONTRACTS AWARDED

California—State Dpt. Hys., Sacramento, steel plate girder bridge and plant mix surf. approaches 0.5 mi. across San Gabriel River and 8.3 mi. west of Anaheim Los Angeles Co., to R. M. Price Co. & O. B. Pierson, 2284 Pinecrest Dr., Altadena, **$279,625.** Bids 3/24. CD 3/2—ENR 3/16.

●**Louisiana**—State Hy. Dpt., Baton Rouge, steel, concrete superstructure Calcasieu River Bridge, State Rt. C 2109, S. P. 3-30-02, F. A. P. FI 35 617-1, Lake Charles, Calcasieu Parish, to Virginia Bridge Co., 821 Madison Ave., N. E., Roanoke, Va., **$3,369,524.** Bids 4/6, awarded 5/9. CD 4/8—ENR 4/14, under LB.

●**New York**—Bureau Contracts & Accounts, Albany, substructure for 5 bridges carrying Cross Bronx Expressway near streets between Longfellow and Harrod Ave., Bronx Co., to Rusciano & Sons Corp., 728 E. 212 St., New York, Zone 67, **$3,372,910.** Bids 2/16. CD 2/18—ENR 2/24, under LB.

Washington—State Hy. Dpt., Olympia, steel girder bridge, 0.222 mi. Primary State Hy. 5, Buckley to Enumclaw Pierce Co., to Don L. Coonly, 1749 Airport Way, Seattle, **$91,646;** rein.-con. girder bridge over West Fork of Hoquiam River, incl. grading, surf. 0.424 mi. Primary State Hy. 9, Grays Harbor Co. to State Constr. Co., 1730 19 Ave. S. Seattle, **$60,272.** Bids 4/29, awarded 4/30. CD 4/13—ENR 4/21 and CD 4/14—ENR 4/21.

STREETS AND ROADS

BIDS ASKED

May 23

Ont., Listowel—W. H. White, clk., c/o Town, asph. resurf. Main and Wallace Sts. Approx. $125,000.

May 24

Ga., Augusta—City, John D. Twiggs, city engr., paving 80,500 sq. yd. various streets. Plans deposit $25. CD 3/27/46—ENR 3/19/46.

Ill., Graysville—City, City Council, City Hall, street improv. incl. 6 in. conc. curb and gutter gray, or crushed stone base course and bit. tr. surf. various streets, storm sewers, pipe culverts. Sect. 5 C. S. $89,458; Sect. 6 C. S. $59,711. Extended date. Marbey & Johnson, Inc., 209½ N. Cross St., Robinson, engrs. CD 4/6—ENR 4/14.

N. Y., Geneva—Bd. P. Wks., City Hall, reconstructing Genesee St. from Castle St. to L. V. R. R. overhead crossing, $36,000. Plans deposit $5. H. M. Bolton, supt. and city engr.; adv. ENR 5/19.

N. Y., New York—President Bronx Boro, 851 Grand Concourse, Zone 51, regulating, grading, setting curb, laying sidewalks, etc., Munday Lane, street ends, repaving Union Ave., E. 140 to E. 152 Sts.; granite block repaving Rider Ave., E. 135 to E. 138 Sts.

N. Y., New York—President Manhattan Boro, Municipal Bldg., Zone 7, grading, widn. curbing, paving and repaving with asph. Avenue D from E. 6 to E. 13 Sts.; E. 10 St. from Avenue D to Franklin D. Roosevelt Dr.; Franklin D. Roosevelt Dr., from E. 6 to E. 10 Sts.; curbing along west curb line of Franklin D. Roosevelt Dr. from E. 10 to E. 13 Sts., etc., for Jacob Riis Houses, Contr. 130. CD 4/5—ENR 4/28.

May 26

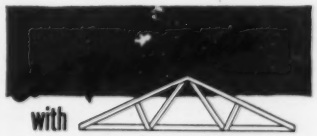
Ill., Chicago—City Dpt. Purchases, Contracts & Supplies, City Hall, c. conc. W. 18 St. from S. Blue Island Ave. to S. Canal St., Sect. 0508.1 C. S. Plans deposit $25. CD 4/25/45—ENR 5/3/45.

†**La., New Orleans**—P. Wks. Office, Eighth Naval Dist., Bldg. 16, Naval Station, grading, raising manhole frames, bit. paving 4 and 6 Sts., and F, G and H Aves., at Naval Station, Spec. 22374. Plans deposit $10.

May 27

†**New Hampshire**—Pub. Roads Admin., Concord Electric Bldg., 115 Capital St., Concord, grav. surf. 4.2⁸⁵ mi. Forest Hy. in Lincoln, Proj. No. N-D for White Mountain National Forest, Laconia. Plans deposit $10.

N. Y., New York—New York City Housing Auth., 63 Park Row Zone 7, street and yard improvs. for Pelham Parkway Houses, Proj. No. NYC-8 in area bounded by Bronxwood, Astor and Wallace Aves.; Astor Ave., Williamsbridge Rd., Waring and Paulding Aves.;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Waring Ave., Williamsbridge Rd., Mace and Bronxwood Aves., Bronx Boro. Plans deposit $25.

June 1

Minn., Duluth—St. Louis Co., W. H. Borgen, aud., Duluth, bit. seal coat 5.4 mi. between 5.4 mi. south of S. A. R. 22, Minnesota Projs. S 263 (42) S. P. 69-519-03 (S. A. P. 51); 17.8 mi. between West Co. line at Bear River and 3 mi. west of Angora, Minnesota Proj. S 300 (51), S. P. 69-529-02 and S. P. 69-530-04 (S. A. R. 22). Plans deposit 50c each; gray. base, bit. stabilized base and road mixed bit. surf. 4 mi. between T. H. 35 west of Embarrass and 2 mi. north and 1.25 mi. east of Embarrass, Minnesota Proj. S 6 (2), S. P. 69-602-03 (S. A. P. 211). Plans deposit 70c; grav. subbase and traffic bound grav. wearing course 5.5 mi. between 3.5 mi. northeast of Floodwood and 9 mi. northeast of Floodwood, Minnesota Proj. S 424 (14), S. P. 69-520-01 (S. A. R. 22). Plans deposit 90c. $50,000. G. W. Diebler, ch. engr.

†Alaska — Alaska Road Comn., Juneau, clearing, grading, draining, surf. 44 mi. Haines Hy. CD 8/17/45—ENR 9/6/45.

June 7

Miss., Crystal Springs—City, City Hall, impvv. 36 streets. Extended date. CD 4/21.

LOW BIDDERS

Indiana — State Hy. Dpt., Indianapolis, rejected bids May 10, bit. surf. 75.93 mi. Vigo, Clay, Owen, Putnam, Boone, Montgomery, Warren and Benton Counties, L.B. **$196,178.**

Indiana—State Hy. Dpt., Indianapolis, May 10, from L. P. Cavett Co., 500 Shepherd Ave., Lockland, O., bit. resurf. 45.18 mi. Pike, Davies, Martin, Lawrence, Green and Sullivan Counties, **$111,699**, est. $118,195; bit. resurf. 62.66 mi., Posey, Gibson, Warrick, Spencer, Perry, Crawford and Harrison Counties, **$108,009**, est. $164,411; bit. resurf. 46.5 mi. Washington, Scott, Clark, Floyd, Jackson and Jefferson Counties, **$98,769**, est. $119,757**from The Barrett Contracting Co., Toledo, O., and Wayne, bit. resurf. 65.96 mi. Allen, Elkhart, DeKalb, Steuben, La Grange, Miami and Wells Counties, **$150,147**, est. $169,019***from McMahan Contg. Co., Rochester, bit. resurf. 55.54 mi. Newton, Jasper, Pulaski and Fulton Counties, **$117,969**, est. $133,335.

Michigan—State Hy. Dpt., Lansing, Apr. 25, stabilized aggreg. surf. course, 4.953 mi. M-134, CD 4/20, and stabilized aggreg. surf. course 4.85 mi. M-134, Chippewa, from J. L. Whitney Road Co., Sault Ste. Marie, **$90,997** and **$208,776** respectively; stabilized aggreg. surf. course, 3.936 mi. U. S. 45, Gogebic Co., from C. G. Bridges, Escanaba, **$85,466.** CD 4/15 — ENR 4/21.

Michigan—State Hy. Dpt., Lansing, Apr. 28, aggreg. surf. course 16.026 mi., grading, drainage structures, oil aggreg. 4.082 mi. M-65, Alcona Co., from Wright Contg. Co., Williamston, **$306,510*****, conc. 1.331 mi. Gratiot Co., from McNally Constr. Co. and McNally-Davis Co., Hess at Sheridan Sts., Saginaw, **$158,658**, CD 4/15—ENR 4/21, b. conc. 2.77 mi. bit. aggreg. 6.416 mi. U. S. 12, Wayne Co., from Cooke Contg. Co., 1116 Penobscot Bldg., Detroit, **$113,-393.** CD 4/20.

N. Y., Flushing—President Queens Boro, Boro Hall, 20-55 Queens Blvd., Kew Gardens, Zone 15, May 9, c. conc. repaving, etc. Northern Blvd from 8th St. to Bell Blvd., and Horrace Harding Blvd. from Kissena to Parsons Blvds., from Macnaphalf Constr. Corp., 33-15 Lawrence St., **$96,576.** CD 5/2—ENR 5/5.

Ohio—State Hy. Dpt., Columbus, rejected bids Apr. 28, b. conc. 10.7 mi., resurf. 11 mi. S.R. 7, Gallia and Meigs Counties, **$116,000*****, b. conc. resurf. 7.757 mi. S.R. 264 S.R. 268, Hamilton Co. **$81,600*****bit. tr. 15.62 mi. Proposals Nos. 1 to 4 (Darke and Preble), Darke and Mercer Counties, **$61,395.** CD 4/14—ENR 4/21.

†Tex., Fort Bliss (El Paso P.O.)—U. S. Eng., Dpt. of Army, Officer Quartermaster Purchasing and Contracting Div., El Paso, cancelled bids to have been opened May 19, road concrete and asph. paving, prefabricated housing area. Serial No. E-41-014-49-75. **$50,000.** CD 5/4—ENR 5/12.

Wis., Milwaukee—City, City Hall, 200 E. Wells St., May 6, paving W. Burleigh St. from Rav. N. Mathe Mfrg. Co., 2901 W. Wisconsin Ave., Zone 3, **$148,368;** N. Lake Dr. from Wm. F. Hunt, 2808 N. Sherman Blvd., Zone 10, **$129,999.** J. P. Schwada, city engr.

CONTRACTS AWARDED

●Georgia—State Hy. Dpt., Atlanta, surf. tr. 4.066 mi. Wilkes-Watkinsville-Bld. Harrow and Thomaco Contgs., to W. L. Cobb Constr. Co., 105 E. Police Dr., Leon Ave., Decatur, **$91,711*****paving U. S. R. 1 north of Folkston on section which has been relocated between State Line and U. S. Charlton Co., to Wright Contg. Co., 504 25 Ave., Columbus, **$112,237*****paving 5.284 mi. Atlanta-Chattanooga Hy. north of Marietta, Cobb Co., to W. L. Florence Contg. Co., Powder Springs, and G. L. Strickler, Austell, **$901,550*****grading, paving and 1 bridge 7.709 mi. Cleveland-Blairsville Rd., Lumpkin Co., to Hardaway Contg. Co., 115 1st St., Columbus, **$153,789*****paving, grading 5.524 mi. Eatonton-Greensboro Rd., Putnam Co., to Jefferson Contg. Co., Wadley, and George C. Blount & Son, 29 Golf Circle N. E., Atlanta, **$116,969.** Bids 4/29. Grand total $1,706,756. CD 4/4—ENR 4/7.

Ia., Toledo—Tama Co. c/o Co. Bd. Supervs., Court House, crushed stone surf. 213 mi. various secondary roads, to Concrete Materials & Constr. Co., 465 Granby Bldg., Cedar Rapids, **$119,830.** Bids 4/27. CD 4/20.

La., New Orleans—City, City Hall, subsurf. Perdido St., to Kelly Generes Constr. Co., 134 Carondelet St., **$63,630*****subsurf. drainage, N. Miro, Elmira, Abundance and Louisa Sts., to Bob Bros. Constr. Co., 2400 Cypress St., **$216,700*****blacktopping downtown streets, to Texas Bithlithic Co., Burma Rd., **$110,103.** Grand total $390,423.

Maine—State Hy. Dpt., Augusta, Apr. 27, b. conc. 3.15 mi. Alfred and Lyman, F. A. Proj. F 360 (4), York Co., from Frank Rossi, R. F. D. 5-A, Gardiner, **$340,737.** CD 4/20.

Maryland—State Hy. Dpt., Baltimore, Apr. 26, c. conc. surf. 1.005 mi. relocation State Rt. 313, Contr. CO 195-1-215, Caroline Co., from George & Lynch, 18 and Broom Sts., Wilmington, Del., **$121,035.** CD 4/20.

Michigan—State Hy. Dpt., Jackson, c. conc. 4.543 mi. U. S. 12, Jackson Co., to Lewis & Frisinger Co., 214 E. Madison, Ann Arbor, **$518,-799.** Bids 2/10. CD 2/18—ENR 2/24, under LB.

Mich., Detroit—Dpt. P. Wks., 104 City Hall, paving Groups 49-12 and 49-13, Contrs. P. W. 816, 824 and 826 to Julius Forath & Son Co., 702 Transportation Bldg., **$63,887*****Contrs. P. W. 817, 822A, 822B, 823, 827, 869, 870, 871, 874 and 877, to Cooke Contg. Co., 1116 Penobscot Bldg., **$86,058*****, Contr. P. W. 818, to Thomas E. Currie, Co., **2531** Connor St., **$53,404.** Grand total $203,349.

Minn., Fairfax—Village, A. R. Quast, clk., grading, sidewalk, curb, gutter, to Duinick Bros. & Gilchrist, Olivia, **$127,964.** Bids 4/20.

●New York—Bureau Contracts & Accounts, Albany, 1.48 mi. sect. Middletown By-Pass Hy. near Goshen, Orange Co., to A. E. Ottaviano Inc., 80 Brooks St., Croton-on-Hudson, **$2,182,273*****reconstructing 2.52 mi. Mamaroneck Ave., Westchester Co., to Mt. Vernon Constr. Co., 3 Terrace Ave., Mt. Vernon, **$.52,159*****reconstructing 5.78 mi. Route 9, south of Route 20, Rensselaer and Columbia Counties, to Johnson, Drake & Piper, 86 Trinity Pl., New York, **$1,623,836.** Grand total $4,858,268. Bids 3/30. CD 4/4—ENR 4/7, under LB.

North Carolina—State Hy. & P. Wks. Comn., Raleigh, c. conc. 1.96 mi. from intersections, U. S. 29 and 70 and Lee St. at Guilford Co. Fair Grounds, east along Lee St. to S. Elm St. in Greensboro, Proj. 5325, Guilford Co., to Thompson-Arthur Constr. Co., Box 1197, Greensboro, **$558,232.** Bids 4/26, awarded 5/9. CD 4/29—ENR 6/5, under LB.

Okla., Enid—City, asph. resurf. 24 blocks business sect. of city, to Metropolitan Paving Co., 1600 W. Reno St., Oklahoma City, **$239,310.** Est $245,000. CD 12/27—ENR 1/20.

Pennsylvania—State Hy. Dpt. Harrisburg, widen and build up pavement with crushed stone base, bit. surf., construct 3 rein.-con. boxes, and one 3 span rein.-con. bridge, crushed stone base, exten. 3 rein.-con. bridges, construct I-beam bridge 30,567 ft. L. R. 156 (3), T. R. 611, from point near Harrow to point north of Kingsville, Quecke Contg. to Keelor Constr. Co., Perkiomenville, **$726,907.** Bids 4/22. CD 4/26—ENR 4/28, under LB.

R. I., Providence — City, City Hall, highway constr., to M. A. Gammino Constr. Co., 728 Valley St., **$125,229.** Bids 3/28, awarded 5/2.

Tex., Anson—Jones Co., Courthouse, road imprvs. surfacing, force account **$110,000.** Joe E. Ward, 545 Nacol Bldg., Wichita Falls, engr.

Tex., Athens — Henderson Co. Courthouse, Athens, farm-to-market roads, 8 mi. Precinct 1, **$125,000**; 10 mi. Precinct 2, **$110,000**; 12½ mi. Precinct 3, **$110,000**, force account. Grand total $375,000. CD 7/17/47—ENR 8/7/47.

Tex., Brady — McCulloch Co., Brady, road imprvs. between Brady and Mason Co. line via Voca, force account. **$110,000.**

Tex., Groesbeck — Limestone Co., C. Ferguson, Judge, road constr., drainage, grad. Precinct 1, **$115,000**; Precinct 2, **$90,000**, force account. CD 4/2/47—ENR 4/17/47.

Tex., Kountze—Hardin Co., Courthouse, road surf. Precinct 2, **$115,000**; road imprvs., surf. Precinct 4, **$80,000**, force account. CD 8/7/47—ENR 8/21/47.

Washington—State Hy. Dpt., Olympia, grading, draining, surf. 1.916 mi. Venetsburg east, F.A.S. No. S 0.594 (1), Clark Co., to P. J. Anderson & Sons, 12501 Aurora Ave., Seattle, **$55,870**; grading 2.2 mi. Primary State Hy. 1, Bellingham to Nugents Bridge, Whatcom Co., to C. V. Wilder Co., Bellingham, **$50,291*****, conc. 3.443 mi. Primary State Hy. 2, Factoria to Issaquah, King Co., to Nor-Pac Corp., 5414 Fauntleroy, Seattle, **$368,-227.** Grand total $474,331. Bids 4/29, awarded 4/30. CD 4/14—ENR 4/21.

Washington — State Hy. Dpt., Olympia, grading, draining, surf. and construct concrete order bridge 4.4 mi. Primary State Hy. 2, Pine Canyon revision, Douglas Co., to Goodfellow Bros., Inc., Wenatchee, **$871,589.** Bids 5/6. CD 5/10—ENR 5/12, under LB.

Wis., Milwaukee—City, City Hall, 200 E. Wells St., bridge 5.2 mi. to Swiftalski Inc., 2075 W. Ohio St., **$56,513;** W. Oklahoma Ave., to Badger Constr. Co., 222 E. Wisconsin Ave., **$98,115.** Bids 4/22. J. P. Schwara, city engr.

B. C., Vancouver—City, 453 W. 12 Ave., asph. Broadway from Main St. to Commercial Dr., and Broadway from Commercial Dr. to Renfrew St., to Commonwealth Constr. Co., Ltd., 670 Taylor St., **$171,108** and **$114,598** respectively***asph. 41 Ave., from Selkirk to Granville Sts. and 41 Ave. from Granville to East Blvd., to General Constr. Co. Ltd., Granville Island, **$70,221*****asph. Granville St., from Broadway to King Edward Ave., to Columbia Bitulithic Ltd., Granville Island, **$121,908.** Grand total $477,835. Bids 4/14, awarded 4/28.

EARTHWORK, WATERWAYS

BIDS ASKED

May 24

†Arkansas—U. S. Eng., P. O. Box 97, Memphis, I. Tenn., placing approx. 830,000 cu. yd. earth work, Stations 177 plus 11 and 181 plus 40, Porter Lake, Item R-701, Lower St. Francis Levee Dist., Serial No. Eng-43-041-43-129.

†Missouri—U. S. Eng., P. O. Box 97, Memphis, Zone 1, Tenn., 1,110,000 cu. yd. earthwork along left bank St. Francis River, from 3 mi. northwest of Senath, to 2½ mi. west of Cardwell, Levee Stations, 26/50-31/46 and 31/46-38/51, Levee Items L 202-SFR and L-195-SFR, Senath and Hargrove, Levee Dist. 4, Dunklin Co., Serial No. Eng. 40-041-49-130.

†Virginia—U. S. Eng., foot of Front St., Norfolk, bulkheads at North Landing and Lake Drummond, Norfolk Co., Inv. Serial No. Eng-44-110-49-186.

May 25

†Georgia—U. S. Eng., P. O. Box 1169, 2301 Grant St., Mobile, Zone 7, Ala., saddle dikes and ring dams, Allatoona Dam, Etowah River, Serial No. Eng-01-076-49-140. Extended date. CD 4/6—ENR 4/28.

†Wis., Port Wing—U. S. Eng., P. O. Box 248, Duluth 1, Minn., repairing east pier, etc., Port Wing Harbor, Inv. No. Eng-21-001-49-17.

May 26

†Illinois—U. S. Eng., 826 U. S. Court House & Custom House, 1114 Market St., St. Louis, Mo., levees, Columbia Drainage and Levee Dist., Proj. Item II-A, Monroe Co., Serial No. Eng. 23-065-49-126.

†Washington—Bureau Reclamation, Dpt. Interior, Coulee Dam, earthwork, structures, Station 1 plus 28.67 to Station 265 plus 00, Winchester Wasteway, Columbia Basin Proj. at West Canal about 1 mi. east of Quincy, extending southeasterly direction from that point, Spec. 2648.

May 27

†Colorado—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, installing embedded parts for hydraulic turbines and completing crane installations, Estes Power Plant and Marys Lake Power Plant, Colorado-Big Thompson Proj., Spec. 2661. L. S. McClellan, ch. engr.

†Colorado—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, installing embedded parts for hydraulic turbines completing crane installations, Estes Power Plant on right bank of Big Thompson River, about 1 mi. east of Estes Park and Marys Lake Power Plant, on Marys Lake approx. 4½ mi. southwest of Estes Park L. S. McClellan, ch. engr.

†Oregon—U. S. Eng., Pittock Block, Portland, clearing, logging, stockpiling merchantable timber within portion of Detroit Dam reservoir area 15 mi. east of Mill City, Marion Co., Eng.-35-026-49-513. CD 6/10/44—ENR 6/29/44.

May 31

La., Rayville—Richland Parish Police Jury, Rayville, approx. 1,651,800 cu. yd. channel excav., approx. 66.77 acres clearing and grubbing; approx. 1,863 cu. yd. channel excav. and approx. 119,560 acres clearing and grubbing.

June 21

●†Ind., New Albany—U. S. Eng., 820 W. Broadway, Louisville, Ky., flood protection, Sect. I, Part 2, $1,700,000.

†Ky., Newport—U. S. Eng., 820 W. Broadway, Louisville, pumping plants, pump stations, equip., transformer substations, sluice gates, pump discharge piping and approx. 16,000 cu. yd. levee embankment, $500,000 plans deposit $15.

LOW BIDDERS

●†Missouri and Kansas—U. S. Eng., 601 Davidson Bldg., Kansas City, Mo., May 3, levees at right bank Missouri River, Atchison and Doniphan Counties, Kan. and Buchanan Co., Mo., Serial No. Eng. 23-028-49-149, from Joseph L. Pohl Co., Nevada, **$1,060,666.** CD 4/21—ENR 4/14.

Pennsylvania—Dpt. Forests & Waters, Harrisburg, May 3, flood control work, boro of Sayre and flood protective works, incl. earth dykes along right or west bank of the Susquehanna River, and the right or south bank of Shephards Creek, and gravel removal in Satterlee Creek, Athens Twp., both Bradford Co., from R. M. Brown, Inc., Clearfield, **$179,961** and **$141,050** respectively.

CONTRACTS AWARDED

●†Kansas—U. S. Eng., 601 Davidson Bldg., Kansas City, Mo., earth levee, rein.-con. floodwall, appurtenances, Armourdale Dist., Kansas City Flood Control Proj., along left bank Kansas River, Mile 0.70 to Mile 2.80 at Kansas City, Kan. Serial No. Eng. 23-028-49-159, to Massman Constr. Co., 21 W. 9 St., Kansas City, Mo., **$3,126,139.** Bids 4/14. CD 4/19—ENR 4/21, under LB.

(Continued on page 68)

Metropolitan Life's Stuyvesant Town and Peter Cooper Village—park-like residential communities in the heart of New York—contain 11,250 modern apartments.

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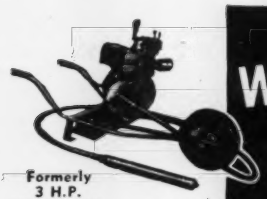

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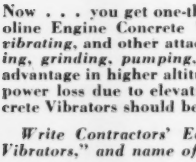

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NAILOCK STEEL DIVISION

THE SANYMETAL PRODUCTS CO., INC.

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(Continued from page 66)

†**Tex., Texas City**—U. S. Eng., 606 Santa Fe Bldg., Galveston, slip work in Texas City Harbor area, to New Orleans Coal & Bisso Towboat Co., United Fruit Bldg., New Orleans, La., **$220,000.** CD 9/19/45—ENR 9/27/45.

AIRPORTS AND AIRBASES

BIDS ASKED

May 23

●†**R. I., Quonset Point**—OVERHAUL and REPAIR BLDG.—Officer Charge of Construction, Naval Air Base, Naval Air Station, engine overhaul extend to Overhaul & Repair Bldg. Spec. 22366. Approx. $3,000,000. Plans deposit $80. Extended date. Charles A. Maguire, 1515 Turks Head Bldg., Providence, archt. CD 4/20—ENR 4/28.

May 24

●**Neb., Omaha** — AIRPORT IMPRVS. — City, City Hall, 18 and Farnam Sts., airport imprvs., various constr. other than bldgs. Approx. $1,000,000. Kirkham Eng. Co., 1204 Dodge St., engr. CD 1/18/45—ENR 2/8/45.

May 26

N. Y., Idlewild — SWITCH HOUSE, GEAR, etc.—At office Chief Engineer, Port of New York Auth., 111 Eighth Ave., New York, Zone 11, switch house gear and wiring for Runways A, B, C and V, New York International Airport. Plans deposit $25. CD 12/31/46—ENR 1/9/47.

On or About May 27

†**Fla., Jacksonville**—AIRPORT FACILITIES—U. S. Eng., Post Office Bldg., Savannah, Ga., constr. and rehabilitating Air National Guard Facilities at Jacksonville Municipal Airport. Extended date. CD 3/16—ENR 3/24.

June 21

●†**Tex., Randolph Field** — HOUSING — U. S. Eng., Fort Sam Houston (Sta. San Antonio), 56 masonry or masonry veneer family housing units, concrete slab fdn. $1,130,000. CD 7/31/47—ENR 8/21/47.

†**Tex., San Antonio**—HOUSING—U. S. Eng., Fort Sam Houston, 48 masonry or masonry veneer family housing units, concrete slab fdn. Lackland Air Force Base. **$968,000.**

Bids Asked

Pa., Pottstown — AIRPORT — City, airport grading, drainage, clearing. **$80,000.** Gannett Fleming, Corddry & Carpenter, Inc., 600 N. 2 St., Harrisburg, engr.

LOW BIDDERS

†**Calif., Point Mugu** — ROADS, etc — U. S. Naval Air Missile Test Center, Point Mugu, Apr. 21, roads, parking areas, drainage. Spec. 22975, from Gridley Constr. Co., P. O. Box 649, oxnard. **$244,457;** Laguna Peak Rd. Spec. 20616, from Fred McKinley, 14503 S. Garfield St., Paramount, **$129,100.** CD 4/5—ENR 4/7.

Pa., Pittsburgh—TERMINAL—Comrs. Allegheny Co., County Office Bldg., May 3, 7 story, approx. 144x270 ft. brick, terra cotta tile mail and cargo rooms to terminal bldg., Greater Pittsburgh Airport, from Navarro Corp., 6219 Broad St., **$526,500.** CD 4/28.

Wash., Seattle — HANGAR, SHOP — United Air Lines, 80 E. 42 St., New York, N. Y., May 3, hangar and shop bldg. at Seattle-Tacoma Airport, from A. F. Mowat Constr. Co., 2833 Eastlake Ave., **$151,937.** CD 5/2.

CONTRACTS AWARDED

†**Calif., Point Mugu**—WATER and GAS DISTRIBUTION LINES—U. S. Naval Air Missile Center, Point Mugu, water and gas distr. lines, 4½ mi. water lines and pump facilities, storage, 3 mi. gas lines, and two 500,000 gal. reservoirs, to Ventura Pipe Line Constr. Co., 901 N. Olive St., Ventura, **$587,140.** Awarded 5/5.

†**Ill., Springfield**—AIRPORT FACILITIES—U. S. Eng., 520 Merchandise Mart, Chicago, Zone 54, hangar, 2 story lean-to and boiler house, underground electrical distr. sys., substation, to John Pelmley Co., Bloomington, **$519,600.** Bids 4/19. CD 4/26—ENR 4/28.

LATIN AMERICA

Mexico, Salamanta — Petroleos Mexicanos (Pemex), Mexico City, oil refinery, to Arthur G. McKee & Co., 2300 Chester St., Cleveland, O., U. S. A. Approx. **$16,000,000.** CD 2/6/46—ENR 2/21/46.

PUBLIC BUILDINGS

BIDS ASKED

About May 23

†**New York**—U. S. Eng., P. O. Box 1715, Baltimore 3, Md., operator's residence and garage and shop bldg., Almond Dam, Steuben Co., Serial Eng-18-020-49-65.

May 23

Pa., Ardmore—Lower Merion Twp., School Dist., Ardmore, cafeteria bldg. $250,000. Savery, Scheetz & Gilmour, 1500 Walnut St., Phila., archts. CD 4/5—ENR 4/28.

May 24

Conn., Greenwich—Town Bd. Educ., Greenwich, 2 story, bsmt., 60x100 ft. brick, steel, concrete addn., alterations to Havemeyer School, Greenwich Ave. Extended date. Plans deposit $30. Coffin & Coffin, 125 E. 46 St., New York, N. Y., and William B. Tubby, Jr., 444 Madison Ave., New York, N. Y., archts.

Minn., Northfield—Bd. Educ., P. E. Fossum, clk., 2 story, bsmt., grade school. $350,000. Plans deposit $25. Toltz, King & Day, 1509 Pioneer Bldg., St. Paul, archts. CD 5/4/48—ENR 5/6/48.

†N. J., Dover—U. S. Eng., 120 Wall St., New York, 5, N. Y., laundry bldg. at Picatinny Arsenal. CD 10/20/46—ENR 12/21/46.

N. Y., Elmira—Bd. Educ., School Dist. 10, City Hall, school, Haskell, Considine & Haskell, Hulett Bldg., Water St., archts. CD 9/14—ENR 9/16, under LB.

N. Y., New York—New York City Housing Auth., 63 Park Row, Zone 7, foundations and general contract; heating and ventilating, electrical and plumbing for Lexington Houses, Proj. No. NYC-21 in area bounded by E. 98 St., 3 Ave., E. 99 St. and Park Ave. Plans deposit $75. Extended date. CD 4/20—ENR 5/5.

N. Y., Scarsdale—Bd. Educ., Union Free School Dist. 6, Scarsdale, school addn. Plans deposit $10.

O., East Cleveland—Bd. Educ., 1849 Shaw Ave., labor and material to install central heating plant for Shaw and Euclid Aves., replace 3 old high pressure boilers with new low pressure boilers. $80,000. Plans deposit $20. Harry M. Novis, 1827 Stanwood Rd., engr.

†Pennsylvania — United States Property & Disbursing Office, RD 2, Annville, motor vehicle storage bldgs. at Lehighton; Kutztown; 33 Street area, Phila.; Ogontz suburb, Phila.; Columbia; Lancaster; Chambersburg; Logan area, Pittsburgh; and Altoona, Serial No. 49-080-49-147-(36) M.

†Pa., Erie—U. S. Eng., Engineer Park, Buffalo 7, N. Y., residence buildings, Veterans Admin. Hospital Proj., Serial No. Eng-30-023-49-45. CD 3/9—ENR 3/17.

May 25

†Okla., Fort Sill—U. S. Eng., P. O. Box 61, Tulsa, family quarters, Facilities C. Inv. No. Eng. 34-066-49-103. CD 8/12—ENR 9/2.

Okla., Norman—E. R. Kraettli, secy. University of Oklahoma, Norman, 3 story bsmt. geology bldg. $300,000. Plans deposit $50. Richard Kuhlman, Norman, archt.

R. I., Kingston — State and Providence Plantation, F. A. Adams, purch. agt., Providence, Proj. 9160, 3 story, brick, concrete chemistry bldg., Rhode Island State College, South Kingston, $824,565. Plans deposit $50. John F. Hogan, 385 Westminster St., Providence, archt. CD 8/6/47—ENR 8/21/47.

May 26

N. Y., Lake Luzerne—Bd. Educ., Hadley-Luzerne School Dists., Lake Luzerne, school and sewage disposal sys. Plans deposit $10. Milton L. Crandall, 10 Broad St., Glen Falls, archt.

●N. Y., Utica—Municipal Housing Auth., First Bank Bldg., housing, $2,000,000.

†Washington—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Bldg., Denver, Colo., one Panel No. 1 for station-service control board SL, one Panel No. 1 for station-service control terminal board and unmounted equip. for mounting on Panels 5 and 7, Grand Coulee Left power plant, Columbia Basin Proj., Spec. 2645.

†Wis., Madison—U. S. Eng., Clock Tower Bldg., Rock Island, Ill., Veterans Admin. Hospital, Serial No. Eng-11-117-49-21 for Veterans Admin., Vermont Ave. between H and I Sts. N. W., Wash. 25, D. C. Extended date. Holabird & Root & Burgee, 150 N. Wabash St., Chicago, Ill., engrs. and archts. CD 4/8—ENR 4/14.

May 27

Ill., Alton—Alton Community Consolidated School Dist. 15, H. Edward Meyer, secy. Bd. Educ., 1211 Henry St., Alton, brick, concrete Junior High School. Plans deposit $20. Albert M. Goeddle, 821 First National Bank Bldg., East St. Louis, archt. CD 6/11—ENR 6/24.

†Mich., Detroit—U. S. Eng., 520 Merchandise Mart, Chicago, Zone 54, Ill., rehabilitation 2 bldgs., to provide facilities for induction center, Serial No. Eng. 11-032-49-17.

Mo., Perryville—Perry Co. Memorial Hospital c/o Bd. Trustees, Gordon Griffith, secy., Perryville, 2 story, bsmt. hospital, $100,000. LaMeaume & Unland, 315 N. 7 St., St. Louis, archts. CD 4/28/47—ENR 5/15/47.

N. S., Sydney River—Minister of Hys. & P. Wks., Halifax, school, for Province of Nova Scotia, Halifax. Plans deposit $75. T. P. Lusby, Dpt. P. Wks., Halifax, engr.

May 30

Va., Fincastle—At Office H. M. Painter, school supt., Fincastle, Fincastle School for Botetourt Co. Approx. $300,000. J. Coates Carter, Martinsville, archt.

About May 31

†N. M., Albuquerque—U. S. Eng., P. O. Box 1538, 2 houses, Sandia Base, Serial No. 291-49-14.

†Florida—U. S. Eng., P. O. Box 1169, Mobile, 7, Ala., temporary housing units, at Jim Woodruff Dam, Apalachicola River, Chattachoochee, Serial No. Eng-01-076-49-163.

(Continued on page 71)

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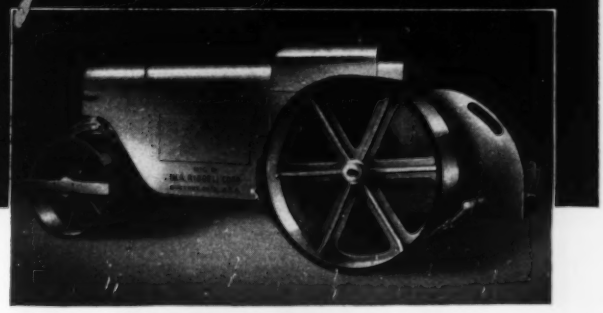

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10G54	10-Ton Roller, Waukesha Gas	54 HP
12D51	12-Ton Roller, Waukesha Diesel	51 HP
12G54	12-Ton Roller, Waukesha Gas	54 HP
12D51-WB	12-Ton Roller, Waukesha Diesel (20" WATER-BALLAST Front and Rear Rolls)	51 HP
12G54-WB	12-Ton Roller, Waukesha Gas (20" WATER-BALLAST Front and Rear Rolls)	54 HP

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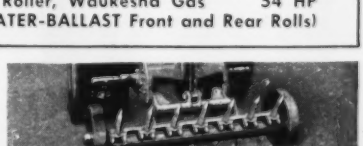

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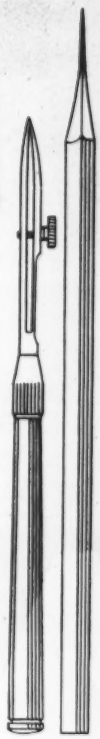

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FOR EVERY PLAN YOU MAKE — — — THERE'S A PAPER BY POST

(Continued from page 69)

June 1

Mont., Forsyth—High School Dist., Forsyth, 1 story, concrete gymnasium and high school, $250,000. Plans deposit $25, general, $15 for plumbing, heating or electrical work. Edwin G. Ossess, 2714 10 Ave. N., Billings, archt. CD 1/19—ENR 2/3.

●**Pa., Bradford**—Bradford Hospital, Bradford, 5 story basmt., approx. 50x200 ft. hospital addn. two 50x166 ft. wings. $1,500,000. Thomas K. Hendrys, 165 Interstate Parkway, archt. CD 1/13—ENR 2/3.

Washington — Bureau Reclamation, Ephrata, construct Burbank Pump Plant 1; 115 kv. substation; 13.2 kv switchyard; concrete discharge pipe. Spec. R1-CB-16 (Region 1) Columbia Basin Proj.

June 3

●**Tenn., Knoxville**—Bd. Educ., 624 Lamar St., Fulton High School. Approx. $1,000,000. Extended date. Barber & McMurry, 2375 Kingston Pike, archts. CD 4/18.

June 9

●**Alaska, Anchorage**—School Dist., Anchorage, three 1 story schools. $1,000,000. Plans deposit $50. W. A. Johnson & Assoc., 1st Natl. Bank Bldg., Everett, Wash., archts. CD 2/16—ENR 3/3.

Bids Asked

Mass., Lowell—City, Bd. Educ., Lowell, 2 story, basmt., brick, steel Bartlett School, Wannalancit St. $2,000,000. Kilham, Hopkins & Greeley, 126 Newbury St., Boston, archts. CD 7/13/45—ENR 7/26/45.

LOW BIDDERS

Colo., Adams City and Derby—Consolidated Adams City, Derby, Irondale & Riverdale School Dist., c/o W. R. Fitzsimmons, Adams City, Apr. 22, 2 schools, from A. A. & E. R. Jones, 682 Wyandot St., Denver. **$460,000.** CD 4/8—ENR 3/14.

Colo., Ft. Morgan—School Dist. 3, Ft. Morgan, rejected bids Apr. 15, Junior-Senior High School addn. **$350,000.** CD 4/22—ENR 4/28, under LB.

Fla., Miami Beach—City, May 2, auditorium, from L. & H. Miller Co., 1421 18 St. **$724,950.** CD 4/20.

Mass., Arlington—Town, School Dpt., Town Hall, Apr. 28, gymnasium and auditorium alterations, addn., Arlington Junior High West, from Grande & Sons Inc., 425 A Broadway, Everett. **$421,799.** CD 9/7—ENR 9/16.

Mass., East Bridgewater—Town, School Dpt., High School Bldg., May 5, school, Central St., from Clark & Smith, Inc., 1372 Hancock St., Quincy. **$408,406.** CD 4/18.

Mass., Norfolk—Commonwealth of Mass., Dpt. Mental Health, State House, Boston, Apr. 29, nurses home, Pondville State Hospital, P-H9, Contr. 1, from F. C. Dolan & Sons, 18 Aldworth St., Jamaica Plain. **$486,023.** Curtin & Riley, 45 Newbury St., Boston, archts.

Mass., Waltham—Commonwealth of Massachusetts, University of Massachusetts, Amherst, Apr. 21, research laboratory, auditorium, field station, PE 10, Contr. 1, from Tornabene Bros., 372 Langley St., Newton Center. **$227,100.** CD 10/14—ENR 10/28.

Miss., Sumner—West Tallahatchie Special High School Dist. Trustees, Sumner, high school, from Consolidated Contractors, P. O. Box 237, Memphis, Tenn. **$437,478.**

●**N. M., Albuquerque**—U. S. Eng., P. O. Box 1538, 3 story, partial basmt. 42x187 ft. structural steel bachelor officers quarters, two 3 story, partial basmt. 37x187 ft. structural steel, company grade bldgs., stucco on masonry walls EOP 919, from Robert E. McKee, 1909-32 Texas St., El Paso, Tex. **$849,700.** Est. $400,000. CD 4/13—ENR 4/21.

●**N. Y., New York**—New York City Housing Auth., 83 Park Row, Zone 2, May 11, general contract and foundations for Colonial Park Houses Proj. No. NYC-8, bounded by Harlem River Dr., Polo Grounds, Harlem River Driveways, from H. R. H. Constr. Corp., 9 E. 40 St., Zone 16. **$6,195,000***** plumbing from Eugene Duklauer, Inc., 215 E. 58 St., Zone 22, **$804,141***** heating, ventilating, air conditioning, Heating Maintenance Corp., 220 E. 138 St., Zone 51. **$636,600***** electrical work, from Rae Electric Equip. Co., 150 E. 41 St., Zone 17. **$376,000.** CD 4/28—ENR 5/5.

●**Ohio**—U. S. Eng., 925 New Federal Bldg., Pittsburgh 19, Pa., Apr. 22 buildings and berlin and Mosquito Creek Reservoirs, near Youngstown, incl. dam tenders dwellings at both lakes and storage bldg. at Mosquito Lake, from L. L. Mayhorn Co., Kinsman. **$101,926.** CD 4/4—ENR 4/14.

Ore., Molalla—Union High School Dist., Mollalla, classroom addns., gymnasium and boilerhouse at Union High School, from Erwin E. Batterman, 147 N. Commercial St., Salem, Alt. **$291,337;** basic **$329,576.** Stokes & Allyn, Hughes Bldg., Portland, archts.

Tenn., Knoxville—Bd. Educ., 624 Lamar St., cancelled bids to have been opened May 31, West Knoxville High School. **$900,000.** CD 4/25—ENR 5/12.

B. C., Vernon—Trustees School Dist. 22, Vernon, 2 story, brick school, from Commonwealth Constr. Co. Ltd., 670 Taylor St., Vancouver. **$446,087.** McCarter & Nairne, 355 Burrard St., Vancouver, archts. CD 4/16/48.

CONTRACTS AWARDED

●**Calif., Brawley**—Pioneer Memorial Hospital Dist., 324 Main St., rein.-con. hospital and utility bldg., nurses quarters, to F. E. Young, Front and Island Sts., San Diego. **$1,137,777.** Bids 4/28, awarded 5/4. CD 5/10—ENR 5/12, under LB.

●**Idaho, Twin Falls**—Twin Falls Co. Hospital Assn., Twin Falls, 5 story, basmt., 75x290 ft. rein.-con. hospital, to Brennan & Caboon, Inc., P. O. Box 507, Pocatello. **$1,085,826.** Bids 4/12. CD 4/19—ENR 4/21.

●**Ill., Chicago**—Chicago Transit Auth., 175 W. Jackson St., 1 story, 228x322 ft., brick, steel, concrete bus service bldg., Kedzie and Foster Sts., to Joseph J. Duffy Constr. Co., 4934 N. Elston Ave. **$1,105,000.** CD 1/26—ENR 1/27, under LB.

Ia., Des Moines—Iowa Power & Light Co., 312 6 St., 10 story boiler house addn., 6 story turbine room addn., power plant, to A. H. Neumann & Bros., Hubbell Bldg., Approx. **$390,000.**

●**N. Y., Poughkeepsie**—Bureau Contracts & Accounts, Albany, general contract 360 bed medical surgical bldg. at Hudson River State Hospital to Merritt-Chapman & Scott Corp., 17 Battery Pl., New York Zone 4. **$6,538,931** **heating to Whitney Dierks Heating Corp., Poughkeepsie. **$323,300***** sanitary work, to Novak & Rehner, Inc., 623 10 Ave., New York, Zone 19. **$519,214.** Grand total $7,581,445. Bids 3/9. CD 3/11—ENR 3/17, under LB.

O., Hamilton—Bd. Educ., H. H. Howard, bus. mgr., 332 Dayton St., general contract Jefferson Tyler School, to F. K. Vaughn Bldg. Co., First National Bank Bldg. **$445,200.** Awarded 4/7. CD 3/30—ENR 4/28.

O., Mentor—Mentor Twp. School Dist. Bd. Educ., Mentor Ave., general contract 2 story, 17x360 ft., brick, block, steel school, to John Gill & Son Co., Bulkley Bldg., Cleveland. **$391,232.** Awarded 4/22. Fulton, Krinsky, Delamotte, 6014 Euclid Ave., Cleveland, archts.

Pa., Annville—Dpt. Military Affairs, Harrisburg, 6 motor vehicle storage bldgs., at Indiantown Gap Military Reservation to Shelley-Sperg Constr. Co., 227 State St., Harrisburg. **$197,817.**

Pa., Embreeville—Dpt. Property & Supplies, 18 and Herr Sts., Harrisburg, general contract laundry and warehouse at Embreeville State Hospital, to McCloskey Homes, Inc., 1626 W. Thompson St., Phila., Zone 21. **$219,000.** Bids 3/16, awarded 4/25. Retired bids Mar. 16, laundry bldg., L.B. **$127,186,** warehouse L.B. **$105,100.** CD 3/22—ENR 3/31, under LB.

Pa., Lancaster—Lancaster School Bd., 229 W. Orange St., brick school, to Herman Wohlsen's Sons, Lancaster. **$544,988.** Est. $750,000. Bids 4/20. Henry Y. Shaub, Lancaster, archt.

●**Tex., Camp Hood (P. O. Killeen)**—U. S. Eng., 606 Sana Fe Bldg., Galveston, housing, Inv. No. 41-243-49-262, to Shaw & Estes, 1407 S. Akard St., **$1,052,295.** CD 5/10—ENR 5/12, under LB.

Tex., Houston—Houston Independent School Dist., 1600 Washington St., Jeff Davis High School, to Thomas Hale & Son, 1107 Girard St., **$617,000.** Bids 4/20. CD 4/26—ENR 4/28, under LB.

COMMERCIAL BUILDINGS

BIDS ASKED

May 24

●**Pa., Bryn Athyn**—Academy of The New Church, Bryn Athyn, school, $1,000,000. Knappen Tippetts Abbett Engineering Co., 62 W. 47 St., New York, N. Y., engineers. CD 2/11—ENR 3/3.

Pa., Carbondale—The First Presbyterian Church, Carbondale, church and Sunday school. $250,000. Charles L. Bolton, 1505 Race St., Phila., archt. CD 4/27—ENR 5/5.

May 25

Man., Minnedosa—P. Miller, 166 Portage Ave., Winnipeg, telephone exchange, for Manitoba Telephone Sys., 168 Portage Ave., W., Winnipeg. Plans deposit $25. R. R. Ross, ch. engr.

May 26

Ind., Upland—Taylor University, Dr. Clyde W. Meredith, pres., 2 story, basmt., brick, stone, rein.-con. college addn., library. $250,000. Leo Ray Bradley, 353 S. Joe River Dr., Fort Wayne, archt. CD 12/27—ENR 12/30.

La., New Orleans—Nolan, Norman & Nolan, archts., Queen & Crescent Bldg., 3 story, 55x154 ft., rein.-con. brick, school, for St. Alphonsus Church, Rev. Father Joseph Carroll, St. Andrew and Constance Sts. CD 2/16—ENR 3/17.

May 28

●**Calif., Santa Monica**—St. John's Hospital, Inc., 1328 22 St., 7 story, rein.-con. hospital. Approx. $1,000,000. J. W. Maloney, Central Bldg., Seattle, Wash., archt. CD 12/13/46—ENR 1/2/47.

May 31

La., New Orleans—Bendernagel & Cazale, archts., 8 Marlborough Gate, 3 story, rein.-con., brick, stone school for St. Agnes Parochial School, 3310 Jefferson Hy. Extended date. CD 5/6—ENR 5/12.

About June 1

La., New Orleans—Charity Hospital, c/o August Perez & Assoc., archts., Audubon Bldg., doctors dormitory, $400,000. CD 1/2/48—ENR 1/8/48.

La., New Orleans—St. Agnes Parochial School, c/o Bendernagel & Cazale, archts., 8 Marlborough Gate, parochial school. Approx. $250,000.

SOON LETS CONTRACT

Ill., Chicago—Catholic Bishop of Chicago, 719 N. Wabash St., soon lets contract three 1 and 2 story bldgs. Coletta School for Children, Palos Hills. Thomas Edward Cooke, 228 N. LaSalle St., archt.

Md., Takoma Park—Kogod-Burka, 4813 Massachusetts Ave., N.W., Wash., D. C., soon lets contract 75x150 ft. store, 40x100 ft. store, 90x150 ft. theatre, all brick, stone, steel. Zink & Moehle, 2514 N. Charles St., Baltimore, archts.

Mass., Westfield—Young Men's Christian Assn., Westfield, soon lets contract 2 story, brick Y. M. C. A. bldg. $350,000. Plans deposit $30. M. W. Maloney & H. J. Tessier, 220 Dwight St., Springfield, archts. CD 12/16—ENR 12/30.

Mo., St. Louis—Third Baptist Church, Dr. C. Oscar Johnson, pastor, 620 N. Grand Blvd., St. Louis, Zone 3, and Church Bldg. Com., c/o L. Baylor Pendleton and Wm. B. Ittner, Inc., assoc. archts. 408 Bd. Educ. Bldg., 911 Locust St., Zone 1, soon lets contract 5 story, 58x78 ft., stone, brick rein. con. main addn. to church, Grand and Washington Blvds. CD 2/11/48—ENR 2/4/48.

●**Pa., Lancaster**—St. Joseph's Hospital, 202 College Ave., soon lets contract brick, steel hospital. $2,500,000. Stanley Biemuensderfer, c/o owner, engr.

Pa., Phila.—George I. Lovatt, archt., 1500 Walnut St., soon lets contract St. Joseph's Hall for Sisters of Our Lady of Charity of The Good Shepherd, 5361 Chew Ave. Approx. $250,000. Miller-Myers Co., 120 Market St., engr. CD 1/26/48—ENR 2/19/48.

LOW BIDDERS

Fla., Miami Beach—Shore Club Hotel, 1901 Collins Ave., May 2, hotel, from W. J. Nixon, 1844 N. W. 11 St., Miami. **$586,702.** CD 5/6.

Md., Cockeysville—Maryland Masonic Home A. F. & A. M., Masonic Temple, Baltimore, 2 story, masonry infirmary bldg., at Bonnie Blink Masonic Home, near here, from Smith, De Corse & Christhilf, 517 N. Charles St., Baltimore. **$331,000.**

N. H., Hanover—Mary Hitchcock Memorial Hospital, J. P. Amsden, pres., Maynard St., Apr. 28, Phase A, nurses home, education bldg., boiler house and kitchen bldg., from Volpe Constr. Co., Eastern Ave., Malden, Mass. **$962,740.** Alt **$225,000.** Curtin & Riley, 45 Newbury St., Boston, Mass., archts.

CONTRACTS AWARDED

Calif., Fairfield—Charles Cournale & Richard Carne, 601 Georgia St., Vallejo, 68 two and 3 bedroom homes in Fairview addn., to Geddes & Smith, Inc., 942 Main St., Napa, Approx. **$600,000.**

Calif., Fresno—Henry Riehl, 4025 Van Ness Blvd., redwood, stucco apartment and office, Owner builds. **$400,000.**

●**Ill., Chicago**—1350 Astor Co-operative Apartments, Inc., c/o Ralph W. Applegate & Co., 208 S. LaSalle St., 48 steel, brick apartments, 1350 Astor St., to Kollie-Foracker & Co., 228 LaSalle St. Approx. **$1,000,000.** Ralph C. Harris, 53 W. Jackson St., archt.

Ind., Fort Wayne—Fort Wayne Roman Catholic Diocese, Very Rev. Msgr. C. J. Feltes, chancellor, general contract Katherine MacDougall Chapel, Cathedral Sq., to William F. Schenkel & Sons, 1120 St. Marys St. Awarded 5/7. A. M. Strauss, 415 Cal-Wayne Bldg., archt.

Md., Baltimore—U. S. Fidelity & Guarantee Co., 113-117 Water St., 8th and 9th floors on 7 story bldg., rein.-con. steel, stone, masonry, to Timmins Hart Constr., Inc., 2623 N. Charles St. **$313,500.** James R. Edmunds, Jr., 130 W. Hamilton St., archt.

N. J., Hasbrouck Heights—Park Terrace Gardens, c/o Neil J. Convery, archt., 27 Washington St., Newark, 70-family apartment. Owner builds. **$600,000.**

N. J., Paulsboro—Berkley Court Apartments, c/o Edwards & Green, engrs. and archts., Broadway and Carmen Sts., Camden, apartment, Berkley Rd., separate contracts. Approx. **$250,000.**

N. Y., New York—Chinese Merchants Assoc., 41 Mott St., Zone 13, store, office and meeting room, Mott and Canal Sts., to Cave Constr. Co., Inc., 256 Fulton St., Brooklyn, Zone 1. Approx. **$500,000.** CD 12/15—ENR 12/30.

●**N. Y., Rochester**—Treasurer's Office, Rochester University, 15 Prince St., medical school and research laboratory, to A. W. Hopeman & Sons Co., 569 Lyell Ave. **$1,000,000.** Bids 5/5. CD 3/30—ENR 4/7.

N. C., Greensboro—Bessemer Imprvt. Co., c/o contract, shopping center, to H. L. Cobb Co., Greensboro. Approx. **$500,000.**

N. C., High Point—Hillcrest Manor, c/o contractor, 76 apartment units, to W. H. Weaver Constr. Co., High Point. Approx. **$500,000.**

Ohio, Cleveland Heights—Radiant Home Builders, 1184 Sunset Ave., 47 one story, frame, stone residences, Renfield Ave., separate contracts. **$600,000.** George A. Litts, Hts. Rockefeller Bldg., archt.

O., Columbus—Linden Development Corp., 74 E. Gay St., 107, 1½ story frame dwellings, 1100, 1200 and 1300 blocks of Carolyn Ave., 1100, 1200 and 1300 blocks of Lenore Ave. Owner builds. **$860,000.**

Pa., Havertown—Alnin Co. Inc., 1236 E. Susquehanna Ave., Phila., residential development, Manoa, separate contracts. **$600,000.**

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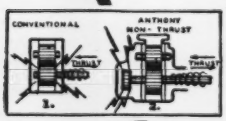

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●**Pa., Phila.**—Mayer I. Blum & Sons, 2601 Parkway, apartment, Wissahickon Ave. and School House Lane, to Turner Constr. Co., 1500 Walnut St., **$5,500,000.** Arthur P. Dean, 2601 Parkway, archt. Julius Dorman, 1411 Walnut St., engr.

Pa., Phila.—Owner, c/o general contractor, club house, to Rittenhouse Constr. Co., 4111 Walnut St., **$250,000.**

Pa., Phila.—Arthur Stern, 2276 N. 51 St., residential development, Custer St., 7200 block, separate contracts. **$250,000.** Allan A. Berkowitz, 2010 Chancellor St., archt.

Tex., Houston—Best Home Builders, Inc., c/o J. E. Letcher & Assoc., 3255 Rosedale St., 50 dwellings, Holmes Rd. and Old Spanish Trail. Owner builds. **$325,000.** CD 2/11—ENR 3/3.

Tex., Houston—King & Sheets, City Natl. Bank Bldg., 16 addnl. dwellings, opposite Montclair Addn. Owner builds. Approx. **$250,000.** CD 5/9.

Tex., Houston—Peckham Development Co., c/o R. W. Peckham, 2143 Westheimer St., shopping center off Buffalo Speedway, force account. Approx. **$300,000.** CD 2/3—ENR 2/17.

●**Tex., Houston**—Plantation Development Co., c/o L. L. Ray, Holmes and Chocolate Bayou Rds., 300 dwellings, portion of South Park subdivision. Owner builds. **$1,650,000.**

Tex., Houston—Hou-Tex Constr. Co., 2222 Cleburne St., 144 unit, University Apartments, own forces. Approx. **$850,000.** CD 5/4.

Tex., Houston—Southwest American Homes, 2005 Canal St., 90 dwellings, own forces. **$490,000.** CD 4/28.

Tex., San Antonio—Roland C. Bremer & J. P. Wilhelm, 2410 W. Summit St., 62 dwellings, Eastlawn Addn. north of E. Houston St., own forces. **$375,000.** CD 4/6—ENR 4/21.

B. C., Vancouver—E. M. & J. D. Craig Ltd., 476 Granville St., 7 story, rein.-con. apartment, Owner builds. **$300,000.** W. K. Noppe, 1186 Nicola St., archt. Awarded 4/30.

●**Ont., London**—Diocese of Huron, Bishop E. N. Luxton, London, college bldgs., Huron College, to Piggott Constr. Co., Piggott Bldg., Hamilton. **$1,120,000.** Bids 5/3, awarded 5/7. CD 3/31—ENR 4/7, under Public Bldgs.

Que., Montreal—Harbour Constr. Co. Ltd., 4615 Mayfair Ave., 4 apartment blocks, Wheeling Ave., **$500,000.** Owner builds.

Que., Montreal—Steinbergs Wholesale Groceries Ltd., 5400 Hochelaga St., department store, to Foundation Co. of Canada Ltd., 1300 W. Sherbrooke St. Approx. **$500,000.** Bids 4/27. CD 4/15—ENR 4/21.

INDUSTRIAL BUILDINGS

BIDS ASKED

May 25

Ont., Kemptville—PLANT—Borden Co. Ltd., Spadina Crescent Toronto, superstructure 1 story, 117x175 ft. brick plant. Approx. $125,000. Plans deposit $10. Core & Storrie, 1130 Bay St., Toronto, engrs.

May 26

Ont., Toronto—FACTORY—Page & Steele, archts., 72 St. Clair Ave. W., concrete, brick factory, for Ohio Chemical Canada Ltd., 189 Duke St., $75,000.

May 28

Tex., Houston—PLANT—Cook Heat Treating Co. of Texas, 6233 Navigation Blvd., plant, $75,000. Mackie & Kamrath, 2713 Ferndale St., archts. R. Johnson, Scanlan Bldg., engr.

June 1

Calif., Los Angeles—STOREHOUSE—Security First National Bank, 561 S. Spring St., 2 story, rein.-con., archives storehouse, approx. $100,000. Parkinson, Powelson, Briney, Bernard, Woodford, 410 N. LaBrea Ave., Los Angeles, archts. CD 4/8—ENR 4/21.

Bids Asked

Conn., New Haven—FACTORY—C. Cowles & Co., 83 Water St., (selected list of bidders) 2 story, 62x98 ft. brick, steel factory addn., Water St. $75,000. Leo F. Caproni, 1221 Chapel St., archt.

Pa., Hatboro—FACTORY—Frank S. Parker Assoc., archts., 256 E. 49 St., New York, N. Y. factory, for V. La Rosa & Sons, Inc., 478 Kent Ave., Brooklyn, N. Y. Approx. $68,000.

SOON LETS CONTRACT

Calif., Eureka—SALES and SERVICE—Carl E. Gustafson, 4 and H Sts., soon lets contract 1 story stucco, rein.-con. auto sales and service bldg. $100,000. Ernest Rick Winkler, 251 Post St., San Francisco, archt.

Calif., Los Angeles—WAREHOUSE, etc.—Graybar Electric Co., 201 Santa Fe Ave., soon lets contract 2 story rein.-con., 80,000 sq. ft. warehouse and office. Approx. $250,000. Claude Beelman & H. Spackler, 7421 Beverly Blvd., archts.

Ill., Chicago—PLANT—Burny Bros., 2747 W. Van Buren St., soon lets contract, 1 story, steel brick plant, Chicago Ave. and Kilpatrick St. $700,000. L. P. Sumarkoff, 105 W. Madison St., archt.

Md., Baltimore—PLANT—Lord Baltimore Press, Greenmount Ave. and Oliver St., soon lets contract 1 story, concrete, steel, brick plant, Edison Hy. and Federal St. Friedman, Alschuler & Sincere, 235 W. Jackson Blvd., Chicago, Ill., archts.

(Continued on page 74)

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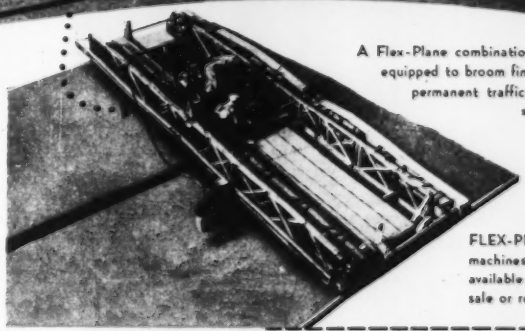

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(Continued from page 72)

Mo., Robertson (St. Louis, Zone 21, P. O.)—SERVICE—General Motors Corp., Electro Motive Div., Argonaut Realty Div., 308 General Motors Research Bldg., Detroit, Mich., soon lets contract 2 story, 146x322 ft. brick, steel, concrete service and repairs bldg., Brown Rd. east of Lindbergh Blvd. CD 1/19—ENR 2/3.

Pa., Phila.—AUTO SERVICE—Robert A. Willcoos, archt., 1700 Sansom St., soon lets contract auto service bldg. for Frank P. Fall, Inc., 32 W. Highland Ave. Approx. $68,000.

R. I., East Providence — WAREHOUSE — First National Stores, Inc., 327 W. Exchange St., Providence, soon lets contract, 1 story brick, steel, concrete warehouse, Ferris Ave. $950,000. Ganteaume & McMullen, 99 Chauncy St., Boston, Mass., archts. CD 10/4—ENR 10/28.

Tex., Sugarland—RE-MELT—Imperial Sugar Co., Sugarland, soon lets contract 6 story 40,000 sq. ft. red tile wall facing, concrete, steel remelt bldg. $375,000. Truman B. Wayne & Assoc., 1703 W. Gray St., Houston, engrs. and archts. CD 2/23—ENR 3/10.

Ont., Windsor — SERVICE — Sheppard & Masson, archts., 52 Chatham St. W., soon lets contract 2 story, concrete brick residential and service bldg., Strabane and Riverside Dr., for Canadian National Institute for Blind, 205 Bartlett Dr. Approx. $125,000.

CONTRACTS AWARDED

Ark., Corning — WAREHOUSE, etc — Clay County Electric Corp., Corning, warehouse and office, to Joyce-Wooten Constr. Co., Wallace Bldg., Little Rock. **$74,578.**

Calif., Los Angeles—WAREHOUSE, etc.—Beverly Hills Development Co., 145 S. Rodeo Dr., Beverly Hills, brick furniture, warehouse, factory and garage, for W. & J. Sloane Co., to Harold Roach, 4285 Huntington Dr., Approx. **$400,000.**

Conn., Stamford—FACTORY—Petray Realty Co., 28 Elm St., New Canaan, 1 story, 45x150 ft., concrete block, brick, stucco factory, Canal St. Owner builds. **$68,300.** Purdy & Rheaume, 28 Elm St., New Canaan, archts.

Del., Dover — SHOWROOM● etc. — Kent County Motors Co., Dover, show room and repair shop, to Clute Bros. P. O. Box 4, Wyoming. **$70,000.** Roscoe Cook, Tingle Bldg., 702 West St., Wilmington, archt. Bids 4/14. CD 4/13—ENR 4/21.

Ga., Savannah—WAREHOUSE—Ballard & Ballard, c/o contractor, warehouse, to Whalley-Strong Co., 4115 Montgomery St. **$70,000.** Bids 4/28. CD 4/29—ENR 5/5.

Ill., Chicago — WAREHOUSE, etc. — E. H. Sargent & Co., 155 E. Superior St., steel, brick warehouse and office, to Carl E. Erickson, 4657 N. Ravenswood St. **$395,000.** Awarded 4/27. Olsen & Urbain, 5 S. Wabash St., archts. CD 4/14—ENR 4/21.

Ill., Geneva—FACTORY—Burgess & Norton Mfg. Co., Geneva, brick● steel factory addn., to A. Wilson & Son, 418 Ford St. **$70,000.** Awarded 4/13.

Ill., North Chicago—PLANT—National Cranberry Assn., 22 and Commonwealth Sts., 1 story, steel plant, to Peter W. Petersen, 182 Stripe Court, Waukegan. **$72,000.** Leonard Lutz, 5 N. Genesee St., Waukegan, engr.

Mass., Chelsea—WAREHOUSE, etc.—Panco Rubber Co., 31 Highland St., warehouse and office, to Jefferson Constr. Co., 75 1 St., Cambridge. Approx. **$68,000.** Bids 2/21. CD 2/16—ENR 2/24.

Minn., Duluth—WAREHOUSE—W. H. Ziegler Co., 304 Lake Ave. S., J. G. Lewis, vice pres., 1 story, 161x181 ft., and 1 story, 43x62 ft. warehouse Garfield Ave., to A. Hedenberg & Co., 4621 E. Superior Ave. **$220,000.** Bids 4/12. CD 4/12—ENR 4/14.

Mo., Brookfield — GRAIN ELEVATOR — Farmers Exchange, Brookfield, grain elevator, to Wisdom Bros. Constr. Co., Moberly. **$75,000.**

Mont., Great Falls—PLANT—Wunderwald & Hass Implement Co., Great Falls, implement bldg., to E. O. Johnson, E. 15722 Sprague Veradale St., Spokane, Wash. **$70,000.** A. V. McIver, Strain Bldg., archt.

Neb., Nebraska City—GRAIN ELEVATOR —Butler-Welsh Grain Co., Grain Exchange Bldg., Omaha, grain elevator, to Ryan Constr. Co., 2606 Taylor St., Omaha. **$125,000.**

N. J., Camden — MANUFACTURING — H. Kohnstamm & Co., Lemuel and Lois Aves., mfg. bldg. alterations and rebuilding 3 mfg. bldgs., separate contracts. Approx. $100,000. Miller-Myers Co., 120 Market St., Phila., engr.

●N. J., Raritan Twp.—WAREHOUSE—Johnson & Johnson, 500 George St., New Brunswick, shipping center, warehouse and office, to John W. Ryan Constr. Co., 369 Lexington Ave., New York. **$1,500,000.** Est. $1,185,000. Fellheimer & Wagner, 115 E. 42 St., New York, Zone 17, N. Y., archts. CD 1/20—ENR 2/17.

N. J., Trenton—FACTORY—Henry Clay & Bock & Co. Ltd., 502 Grand St., factory alterations, to Campbell Bros., Grand Central Terminal Bldg., New York, N. Y. **$100,000.** A. Francisco & Jacobus, 511 5 Ave., New York, N. Y. engrs.

N. C., Burlington—MILL and WAREHOUSE —Burlington Mills, Burlington, decorative fabric mill and warehouse, to H. L. Coble Constr. Co., Greensboro. **$317,810.** McMinn & Norfleet, Greensboro, archts. Bids 3/4.

O., Columbus—GARAGE—Monypeny Hammond branch of Midland Grocery Co., 405 N. High St., 1 story service garage, and loading dock with provision for private parking to Leo E. Ruisinger, Inc., 851 Frebis Ave. Approx. **$110,000.**

Ore., Portland—WAREHOUSE—Dan Davis, 2320 N. Randolph St., 40,000 sq. ft. rein.-con. warehouse, to O. W. Ingle, 2546 N. E. Nelson St. **$250,000.** Lathrop, Gillman & Percy, Terminal Sales Bldg., archts. Awarded 4/23.

Pa., Hanover—FACTORY—Hanover Sample Book Co., Hanover, concrete block, steel factory addn., to Klunk Bros., Carlisle St. **$75,000.**

Pa., Kimberton—ABATTOIR—A. C. Roberts Co., Kimberton, 1 story, bsmnt., 50x59 ft. masonry, steel abattoir addn. to C. Raymond David, Kimberton. **$70,000.** George A. Youndt, 16 S. 6 St., Allentown, archt.

Pa., Mechanicsburg—PIPELINE TERMINAL —Gulf Oil Co., 3000 Penrose Ave., Phila., concrete pipeline terminal, to Barker Constr. Co., 16 S. Broad St., Phila., **$75,000.** R. C. Roetter, c/o owner, engr.

●Pa., New Castle—POWER PLANT—Pennsylvania Power Co., New Castle, brick, steel power plant addn., to Townsend & Bottum, Inc., 501 Wolverine Bldg., Ann Arbor, Mich., approx. **$1,500,000.** Commonwealth & Southern Corp., 2o Pine St., New York, N. Y., engrs. CD 11/11—ENR 11/25.

Pa., Phila — GARAGE — Elgin Corp., of Penna, 1825 Market St., 1 story, 110x262 ft., rein.-con. garage, to Haverstick Borthwick Co., 1505 Race St. **$150,000.** CD 3/30—ENR 4/7.

●Que., Arvida — LABORATORY — Aluminum Co. of Canada Ltd., Sun Life Bldg., Montreal, 2 story, 50x200 ft. and 2 story, 60x200 ft. extens. at east end, 1 story, 50x116 ft. exten. at west end, steel laboratory and auditorium, concrete fdn., to Foundation Co. of Canada Ltd., 1900 Sherbrooke St. W., Montreal. Approx. **$1,000,000.** Barott, Marshall, Montgomery & Merrett, Canada Cement Bldg., Montreal, archts. CD 4/27—ENR 5/5.

UNCLASSIFIED

BIDS ASKED

After May 18

†Montana—RECREATIONAL AREA—U. S. Eng., Fort Peck, utility bldg., floating boat docks, water supply, sewage disposal facilities, Fort Peck Recreational Area, Fort Peck Reservoir, Serial No. Eng. 24-016-49-76. Plans deposit $10.

May 24

Mich., Detroit—PAVILION—Dpt. P. Wks., City Hall, 1 story, masonry pavilion, Contr. ZO-6, Royal Oak, for Detroit Zoological Park Comm., 8450 Ten Mile Rd., Plans deposit $15. G. R. Thompson, city engr. CD 3/30/43—ENR 4/1/43.

Missouri—RURAL DISTRIBUTION LINES—Lewis County Rural Electric Co-operative, B. L. Anderson, pres., Lewistown, 171.6 mi. rural distr. lines Adair, Clark, Knox, Lewis, Marion, Scotland and Shelby Counties, Proj. Missouri 23 M, Lewis. Plans deposit $25. Drazen & Assoc., 8133 Forsyth Blvd., Clayton, St. Louis, Zone 24, engrs.

South Carolina — RURAL DISTRIBUTION LINES — South Carolina Public Service Auth., Moncks Corner, 23.7 mi. 33 kva. rural distr. line from Pinopolis Power Plant to new spillway power plant, incl. 33 kv. substation near St. Stephens. Plans deposit $10. CD 2/13/45—ENR 3/8/45.

After May 24

†Montana—RECREATIONAL AREA—U. S. Eng., Fort Peck, recreation bldg., water supply and appurtenant work Pines Recreational Area, Fort Peck Reservoir, Serial No. Eng. 24-016-49-77; water pumping, treatment and storage facilities, Hell Creek Recreational Area, Fort Peck Reservoir, Serial No. Eng. 24-016-49-78. Plans deposit $10 each.

May 25

N. S., Cole Harbor—WHARF—J. M. Somerville, secy., c/o Dpt. P. Wks., Hunter Bldgs., Ottawa, Ont., wharf replacement. Approx. $50,000. R. Blais, c/o owner, engr.

May 26

Arkansas—RURAL DISTRIBUTION LINES —Rich Mountain Electric Co-operative, Mena, rural distr. lines extens., Proj. 33, Polk Co. George C. Henry Co., 1007½ Texas Ave., Shreveport, La., engr. CD 2/28—ENR 3/10.

Georgia—RURAL DISTRIBUTION LINES— Habersham Electric Membership Co-operative, Clarkesville, 128.12 mi. rural distr. lines, Stephens, Habersham, Hall, Lumpkin, White and Rabun Counties. Plans deposit $25. Southern Eng. Co., 699 Spring St. N.W., Atlanta, engrs. CD 4/13—ENR 4/28.

Texas — RURAL DISTRIBUTION LINES — Kimble Electric Co-operative, Junction, 210 mi. rural distr. lines, Kimble Co. $160,000. Extended date. J. H. Flood & Co., 707 Amicable Bldg., Waco, engr. CD 3/29—ENR 3/31.

May 27

N. Y., Babylon — COMFORT STATION — Long Island State Park Comm., Belmont State Park, Babylon, comfort station, etc.

May 31

Calif., Los Angeles—PARK GYMNASIUM, etc.—Bd. Supervs. Los Angeles Co., 501 Hall of Records, Will Rogers Memorial Park Gymnasium and Community Bldg., $140,000. Wilson & Williams, 815 W. 5 St., archts. CD 4/7/48—ENR 4/22/48.

Ky., Leitchfield — GAS MAINS — City, City Hall, gas mains. $35,000. Plans deposit $15. Maurice Miller, McDowell, Bldg., Louisville, engr.

†Tex., Orange—SPRINKLER SYSTEM—P. Wks. Office, Eighth Naval Dist., Bldg. 16, Naval Station, New Orleans, La., sprinkler sys. in Dispensary Bldg. 103, and pumper connections and post indicator valves on station sprinkler sys. at Naval Station, Spec. 22266. Plans deposit $10.

†Washington — COOLING TOWER—Bonneville Power Admin., 729 N. E. Oregon St., Portland 8, Ore., furnishing, erecting cooling towers for Port Angeles Substation, Inv. 4611.

June 1

†Washington — TRANSMISSION LINE — Bonneville Power Admin., 729 N. E. Oregon St., Portland 8, Ore., clearing right-of-way for 21.7 mi. for North Bonneville-Troutdale 230 kv. transmission line, Skamania and Clark Counties, Inv. 4610. Plans deposit $25.

†Washington—OVERHEAD POWER CABLE —Civil Aeronautics Admin., Smith Tower Annex, Seattle, Zone 4, installing 5,900 ft. surface-laid and overhead power cable to existing beacon site near Issaquah and 11,000 ft. surface-laid power cable, near Hyak.

June 2

†Montana — OUTDOOR SUBSTATION, etc. — U. S. Eng., Fort Peck, 115 kv outdoor substation and switchyard addn., incl. control and protective facilities, Power Plant, Fort Peck Proj., Serial No. Eng. 24-016-49-70. Extended date. CD 4/6—ENR 4/14.

†South Dakota — AIR-VENT PIPING — Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point, f.o.b. cars Lemmons, one lot air-vent piping for Shadehill Dam, Grand River Unit, Spec. 2654.

†Washington—STRUCTURAL STEEL—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., misc. structural steel for Control Bay-R, Service Bay RS, and Units R-1, R-2, and R-3, Grand Coulee Power Plant, Columbia Basin Proj., Spec. 2664.

Bids Asked

●Texas, Arkansas, Missouri and Nebraska—GAS PIPELINE—Trunkline Gas Supply Co., 602 Commonwealth Bldg., Wash., D. C., 711 mi. 26 in. natural gas pipeline, appurtenances between Edgar, Tex. and Palmyra, Neb. $33,340,300. CD 4/15/47—ENR 5/1/47.

●Texas and Louisiana — GAS PIPELINES — Trunkline Gas Supply Co., 602 Commonwealth Bldg., Wash., D. C., 810 mi. various-sized natural gas pipelines in Gulf coast area. $25,000,000. CD 5/9.

BIDS ASKED

Calif., Glendale—TRAFFIC SIGNALS, etc.— City, 613 E. Broadway, May 5, traffic signals and safety lighting at 11 intersections from Westates Electrical Constr. Co., 3523 W. Washington Blvd., Los Angeles, **$58,882.** CD 4/27.

Calif., Los Angeles—SWIMMING POOL— Bd. Supervs. Los Angeles Co., 501 Hall of Records, May 3, Belvedere Park Swimming Pool, East Los Angeles, from C. & H. Cement Contractors, 132 S. Kauffman Ave., Temple City, **$87,400.**

Ga., Brunswick—BOAT FACILITIES—Glynn Co., Brunswick, rejected bids boat facilities, L.B. **$57,471.** CD 5/2—ENR 5/5.

●Ill., Chicago — SUBWAY — City of Chicago, Dpt. Purchases, Contracts & Supplies, City Hall, May 5, Contr. F-4, Dearborn St. Subway, from M. J. Boyle & Co., 2480 N. Elston Ave. **$1,196,683.** CD 4/14.

Missouri—RURAL DISTRIBUTION LINES— Civilian Electric Corp., C. J. Koetting, mgr., Ste. Genevieve, May 5, labor, 30 mi. 69 kv rural distr. lines, Sect. 3, Missouri 58-C, Ste. Genevieve, from Clinton Eng. Co., Three Rivers, Mich., **$16,311,** materials, **$108,832.** CD 4/19.

North Dakota—RURAL DISTRIBUTION LINES—Cavalier Rural Electric Co-operative, Langdon, Apr. 28, rural distr. lines, Contr. Co., Sect. CI, 318 mi. from Swenson Constr. Co., Columbus, **$360,159;** Sect. C2, 265 mi. from Lake Electric Co., Devils Lake, **$313,957.** CD 3/4.

North Dakota and Minnesota—RURAL DISTRIBUTION LINES—Minnkota Power Co-operative, Grand Forks, Apr. 19, rural distr. lines, eastern North Dakota and western Minnesota, from Smith Constr. Co., 1000 44 Ave., N. Nashville, Tenn., **$363,647.** CD 4/6.

Pa., Coraopolis—FIELD HOUSE, etc.—School Dist., Coraopolis, 1 story, 20x80 ft. concrete block field house, bleachers, baseball field, track, etc., from O. H. Martin, 19 1 St., Sharpsburg, Pittsburgh, Zone 15, **$106,600.** Alt. **$99,000.** Est. $125,000. Charles & Edward Stotz, 801 Bessemer Bldg., Pittsburgh, archts.

South Dakota—RURAL DISTRIBUTION LINES—Lake Region Electric Assn., Webster, Apr. 26, rural distr. lines, Day Co., from Davis-Hydaker Co., Spencerville, O., **$89,923.** CD 4/5—ENR 4/14.

†Wyoming — PENSTOCKS, etc. — Bureau Reclamation, Dpt. Interior, Bldg 1-A, Denver Federal Center, Denver, Colo., Apr 26, Schedule 1, one 15 ft. diam. header, two 10 ft. 6 in. diam. penstocks, one 67 in. and one 66 in. diam. outlet pipe, appurtenances for Boysen Power Plant, Missouri River Basin Proj., Boysen Unit, Spec. 2621, from Gunderson Bros. Eng. Corp., 4700 N. W. Front St., Portland, Ore., **$162,000.** CD 3/25—ENR 3/31.

CONTRACTS AWARDED

Calif., El Centro—SWITCHING STATION—Imperial Irrigation Dist., El Centro, 92 kv. switching station, to J. M. Montgomery, 306 W. 3 St., Los Angeles, **$69,280.** Bids 4/26, awarded 5/3.

Calif., Los Angeles—PARK DEVELOPMENT—Bd. Supervs. Los Angeles Co., 501 Hall of Records, Development 1, Rosemead Park directors bldg., skating rink, and vault room, to G. Goldhart, 1884 Woodlyn Rd., Pasadena, **$54,370.** Bids 4/19, awarded 4/27. Kistner, Curtis & Wright, 816 W. 5 St., archts.

Fla., Hialeah — MOTOR COURT—Palm Constr. Co., 73 E. 2 St., motor court, Owner builds, **$50,000.**

Fla., Miami Beach — SWIMMING POOL, etc. — St. Mortiz Hotel, 1565 Collins Ave., swimming pool and 12 cabanas, to S. C. Davis Constr. Co., 1815 Purdy Ave., **$701,000.**

Georgia—RURAL DISTRIBUTION LINES—North Georgia Electric Membership Corp., Dalton, 175 mi. rural distr. lines, Whitfield Co., etc., to Leo T. Barber, Moultrie, **$184,000.** Bids 4/21. CD 4/14—ENR 4/21.

Ill., Charleston—DRIVE-IN THEATRE—Ed Clark & J. Bianco, Mattoon, drive-in theatre, Rt. 16 at eastern edge of city, to E. S. Moore & Son Co., Danville.

Kentucky—RURAL DISTRIBUTION LINES—South Kentucky Rural Electric Co-operative, Somerset, rural distr. lines, Wayne Co., to J. W. Layne, 212½ Union St., Nashville, Tenn., **$318,337.** Bids 4/15. CD 3/23—ENR 3/31.

Ky., Madisonville—DRIVE-IN THEATRE—Crescent Amusement Co., R. E. Baulch, pres., 147 Fifth Ave., Nashville, Tenn., drive-in theatre, U. S. 41 on 12 acre site south of here, separate contracts. Approx. **$100,000.** CD 4/6—ENR 4/28.

Mississippi—RURAL DISTRIBUTION LINES—Tombigbee Electric Power Assn., Tupelo, 150 mi. rural distr. lines, Lee Co., to W. L. Coston & Sons, First National Bank Bldg., Birmingham, Ala., **$170,850.** Bids 4/12. CD 4/8—ENR 4/14.

Missouri—RURAL DISTRIBUTION LINES—West-Central Electric Co-operative, Inc., Samuel R. Greer, mgr., Higginsville, 101 mi. rural distr. lines, Sect. S, Lafayette Co. and vicinity, force account, Approx. **$110,000.** Bids 5/3—CD 4/26.

Mo., Kennett—DRIVE-IN THEATRE—H. E. Boyd, c/o Coca Cola Bottling Co., Kennett, drive-in theatre, known as Johnson Drive-In Theatre, separate contracts. Approx. **$80,000.**

New York—CONTACT RAIL—Bd. Transportation, 250 Hudson St., New York, Zone 13, Apr. 22, installing 150 lb. contact rail for BMT operation to Astor, Queens Boro. Contr. T-91, from Tully & DiNapoli, Inc., 89-31 161 St., Jamaica, **$426,666.** CD 4/6—ENR 4/14.

N. Y., New York—PIPING, etc.—Bd. Transportation, 250 Hudson St., Zone 13, piping, misc. equip. etc. for 59 St. IRT power plant extens., to Almirall & Co., Inc., 53 Park Pl., Zone 7, **$520,000.**

O., Dayton — GYMNASIUM — University of Dayton (Society of Mary), Rev. George J. Renneker, pres., 300 College Park Ave., gymnasium to H. G. Danis Co., E. First St., **$475,000.** CD 4/11—ENR 4/21.

Tennessee—RURAL DISTRIBUTION LINES—Fort Loudoun Electric Co-operative, Madisonville, rural distr. lines, Loudon Co., to Whalley Constr. Co., Jackson, **$344,851.** Bids 4/19. CD 4/4—ENR 4/7.

Tex., Dallas—GAS LINES—Lone Star Gas Co., 1915 Wood St., natural gas line extens., force account, **$100,000.** CD 1/12/48—ENR 1/22/48.

Tex., Dallas—GAS LINES—Ross W. Smith, Garland Rd. and Buckner Blvd., gas lines, sect. of Arlington Park Estates., own forces, **$55,000.**

Tex., Houston — SHIPYARDS — Todd Dry Docks, Inc., Chronicle Bldg., addnl. expans., reconditioning, imprv. Old Brown Shipyards, Purchase and Hire. **$175,000.** CD 5/4.

● **Alberta and Saskatchewan**—STEEL PLATE, etc.—Imperial Oil Ltd., 56 Church St., Toronto, Ont., 67,000 tons steel plate to Steel Co. of Canada Ltd., Wilcox St., Hamilton, Ont.*** plate fabricated into 457 mi. 16 in. pipe, to Page-Hershey Tubes Ltd., Welland, Ont.*** pump for pump station, to Railway & Power Eng. Corp. Ltd., Three Rivers, Que. Approx. **$9,000,000.** CD 2/19/48—ENR 3/4/48.

Alberta—TRANSMISSION LINES—Canadian Western Natural Gas Co. Ltd., Calgary, transmission lines, owner builds. Approx. **$331,000.** CD 2/3—ENR 3/24.

Ont., London — LIVESTOCK ARENA SECTION — Western Fair Bd., City Council, and Mayor R. Dennis, London, 1 story, 257x285 ft., rein.-con. wood, concrete livestock section arena, etc., to Sterling Constr. Co., 2494 Sandwich St., Windsor, **$468,000.** Awarded 5/3. CD 2/23—ENR 2/25, under LB.

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CONSTRUCTION REPORTS—Third Section

WATER SUPPLY

BIDS ASKED

May 24

Ill., Anna—State Welfare Dpt., Springfield, water supply sys., Anna State Hospital. C. Herrick Hammond, State Armory, Springfield, archt.

CONTRACTS AWARDED

La., Abbeville—City, City Hall, water filtration plant, to Refinite Sales Co., 1023 Harney St., Omaha, Neb., **$137,900.**

Tex., Baytown—Henry & Edmonds Co., 11002 Aldine-Westfield Rd., c.i. waterlines, own forces. **$33,000.**

SEWERS, WASTE DISPOSAL

BIDS ASKED

May 24

Ill., Springfield—State of Illinois, Springfield, sanitary sewers for Illinois State Fair Grounds. C. Herrick Hammond, State Armory, archt. CD 5/9—ENR 5/26.

June 6

Calif., Redding—City, City Hall, sanitary sewerage sys. for Garden-Olivia Sewer Dist. Approx. $50,000. Plans deposit $10.

June 14

La., Shreveport—City, City Hall, Kings Highway Incinerator addn. $250,000. Plans deposit $25. William S. Evans, Ardis Bldg., archt. CD 2/28—ENR 3/17.

Wis., Brooklyn—Village, Contr. 1, 14,000 lin. ft. 8- to 10-sanitary sewers; Contr. 2, 5,500 lin. ft. 6 in. sewer laterals; Contr. 3, sewage treatment plant. Plans deposit $20. General Eng. Co., Portage, engr.

June 15

†Ia., Council Bluffs—U. S. Eng., 1709 Jackson St., Omaha, Neb., 29 Ave. and Pacific Fruit Express Pumping Stations and 29 Ave. sewer alterations. Serial No. Eng. 25-066-49-218. CD 5/9—ENR 5/19.

Bids Asked

●Pa., Scranton—City, extended indefinitely bids to have been opened April 30, sewage disposal plant. $3,000,000. Plans subject to government approval. CD 4/6—ENR 4/21.

Tex., Houston — Bert Wheeler & Assoc., 8580 Main St., storm sewers. $75,000. CD 5/16.

LOW BIDDERS

Calif., Oakland — East Bay Municipal Utility Dist., 512 16 St., Oakland, May 11, raw sewage pump, plant and grit chambers, Spec. SD-18, from Stanley H. Kolker, 1624 Fremont St., Crockett, **$568,726.** CD 4/20—ENR 4/28.

Calif., Yuba City—City, City Hall, May 9, Unit 2 sewage treatment works, from F. J. Early Jr. Co., 369 Pine St., San Francisco, **$287,490.** CD 4/22—ENR 4/28.

Nev., Reno—City, City Hall, May 9, sewage treatment works enlargement, Unit 2, from Walker J. Boudwin Constr. Co., Box 2655, **$574,960.** Alternate 2, from G. F. Schilling Eng. Co., 201 Sunnyside Dr., **$587,789.** CD 4/12—ENR 4/14.

CONTRACTS AWARDED

Conn., Waterbury—Bd. P. Wks., City Hall, constr. Mad River Interceptor, incl. Contr. 1, approx. 5,555 ft. 30- to 42-in. rein.-con. intercepting sewer; Contr. 2, approx. 2,850 ft. 30 in. rein.-con. sewer, to Inter County Constr. Co., Hyattsville, Md., **$586,816.** Bids 4/29. CD 4/14—ENR 4/21.

S. C., Rock Hill—City, City Hall, sanitary sewer improv., to C. Y. Thomason Co., Greenwood, **$171,587.** Bids 5/6.

Tenn., Memphis—City, sanitary sewers in 11 new subdivisions, to F. D. Harvey & Co., 688 S. Bellevue St., **$149,128.**

Tex., Baytown—Henry & Edmonds Co., 11002 Aldine-Westfield Rd., Houston, sanitary sewers, own forces, **$60,000.**

Tex., Houston—Bert Wheeler & Assoc., 8580 Main St., sanitary sewers, 9200 Block S. Main St., own forces. **$75,000.** CD 5/16.

BRIDGES

BIDS ASKED

STATE HIGHWAY LETTINGS

May 23	**May 27**
Connecticut	**Kentucky**
May 24	**Pennsylvania**
Iowa	**Washington**
May 25	**June 1**
Maine	**Louisiana**
Michigan	**June 7**
May 26	**Iowa**
Kansas	**June 9**
New Jersey	**California**

LOW BIDDERS

California—State Div. Hys., Sacramento, May 11, rein.-con. girder bridge, approaches at Clear Creek about 9 mi. south of Happy Camp, Siskiyou Co., from G. M. Carr & Rocca, 2333 Burbank Ave., Santa Rosa, **$129,779.** CD 4/20—ENR 4/28.

CONTRACTS AWARDED

Kansas—State Hy. Dpt., Ottawa, 80x160 ft. and two 60 ft. continuous steel girder span, Bridge No. 68-30-8.6, Sta. 543 plus 12.6, S. P. 68-30 F 560 (3), and Alt. 1, four 40x50 ft. continuous steel beam span, Bridge No. 68-30-10.9, Sta. 662 plus 30, S. P. 68-30 F 560 (3), both Franklin Co., to Carrothers Constr. Co., Inc., Paola, **$79,311** and **$50,993** respectively. CD 4/22—ENR 4/28, under Streets and Roads.

STREETS AND ROADS

BIDS ASKED

STATE HIGHWAY LETTINGS

May 23	**May 27**
Connecticut	**Kentucky**
British Columbia	**Washington**
May 24	**Wisconsin**
Iowa	**June 1**
Maryland	**Kansas**
Ohio	**June 2**
West Virginia	**Ontario**
May 25	**June 3**
Colorado	**Pennsylvania**
Michigan	**June 9**
May 26	**California**
Kansas	

June 1

†California—U. S. Eng., Wright Bldg., Sacramento, paving, utilities for portable houses near Piedra, Pine Flat Dam, Spec. 1393.

June 13

Calif., Hillsborough—Town, Town Hall, improv. streets, sewers, water sys., etc. in Crystal Springs Tract. Plans deposit $10. E. P. Willsey, city engr.

LOW BIDDERS

†California—Pub. Roads Admin., Phelan Bldg., San Francisco, May 10, clearing 8.257 mi. along hy. proj. Calif. FD 6400-B, Mammoth Sierra National Forest, Madera Co., from Barker Corp., 1201 N. Sargent St., Stockton, **$69,650.** CD 4/28.

Ga., Atlanta—Central of Georgia Railway Co., c/o H. F. Sharpley, ch. engr., 233 W. Broad St., Savannah, rejected bids May 10, grading, clearing industrial area; incl. 150 units, 100 sq. ft. clearing; 24 units, 100 sq. ft. grubbing, 325,000 cu. yds. excav., 600 lin. ft. 24 in. concrete pipe.

Kansas—State Hy. Dpt., Lakin, rejected bids May 3, base and double asph. surf. tr. 9.349 mi. S. P. 283-29 F 428 (10), Ford Co., L. B. **$143,370.** CD 4/15—ENR 4/21.

Massachusetts — Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, May 10, highway construction Montague, from Montague Constr. Corp., Fitchburg, **$153,773.** CD 4/27—ENR 5/5.

Ont., Toronto—City, H. E. McCallum, mayor, c. con., Peter St. from King to Queen Sts., to Godson Contracting Co., and St., Approx. **$59,910.** M. Stewart, c/o owner, engr.

CONTRACTS AWARDED

Arizona—State Hy. Dpt., 17 Ave. and Jackson St., Phoenix, improv., 7 mi., Showlow-McNary hy., Apache Co., to Richey Constr. Co., St. Johns, **$72,194*****improv. 4 mi. Topock-Kingman Hy., Mohave Co., to A. L. Shuffler, 1410 S. 7 St., Phoenix, **$186,464*****constr. 13¼ mi. Tucson-Florence Hy. Final Co., to R. H. Martin, Tucson, **$104,165.** Grand total **$362,823.** Bids 4/29, awarded 5/3. CD 4/20.

●California—State Div., Hys., Sacramento, c. con. and plant mix surf. 13 mi., constr. grade separation structure, 2 undercrossings, pedestrian overcrossing, ramp overcrossing hy. lighting traffic signals, between Augusta St. and 25 St., to Guy F. Atkinson Co. & Charles L. Harney, 575 Berry St., San Francisco, **$2,819,359.** Bids 5/4. CD 5/10—ENR 5/12, under LB.

Kansas—State Hy. Dpt., La Crosse, bit. reconstruction and single asph. surf. tr. 12.869 mi. S. P. 18-53 K 2265 (1), Lincoln Co., to Roy Baker Organdie, **$56,652****base course 7.874 mi. S. P. 77-57 F 599 (2), and sheet asph. surf. course 7.874 mi. Sp. 77-57 F 599 (2), Marion Co., to San-Ore Constr. Co., McPherson, **$137,-792** and **$101,995** respectively*******base alt. 3 and dense graded surf. course 2.08 mi. S. P. 18-21 F 481 (17), Dickinson Co., and grading, base alt. 3 and dense graded surf. course 12.418 mi. S. P. 18-72 F 481 (20) Pt. 1, Ottawa Co., to Harry Heinery, Inc., Ottawa, **$175,980** and **$256,-551** respectively. Grand total **$728,969.** Bids 4/29. CD 4/15—ENR 4/21.

Kansas—State Hy. Dpt., Lakin, subgrade reconditioning, base, and double asph. surf. tr. 15.308 mi. S. P. 50-47 F 338 (16) Pt. 1, Kearney Co., to San-Ore Constr. Co., McPherson, **$214,-173;** base and dense graded surf. course 9.58 mi. S. P. 83-28 F 417 (2), Finney Co., to M. W. Watson, National Bank of Topeka Bldg., Topeka, **$123,295.** CD 4/15—ENR 4/21.

Kansas — State Hy. Dpt., Ottawa, grading 5.308 mi. S. P. 68-30 F 560 (3), Franklin Co., to Perry McGlone Constr. Co., 608 Grand Ave., Bank Bldg., Kansas City, Mo., **$187,514.** CD 4/22—ENR 4/28.

Kansas—State Hy. Dpt., Pratt, grading, detour 8.002 mi. S. P. 54-76 F 341 (16), Pratt Co., to San-Ore Constr. Co., McPherson, **$184,963.** CD 4/21—ENR 4/28.

Kansas—State Hy. Dpt., Stockton, base and dense graded surf. course 6.263 mi. S. P. 183-82 F 259 (5) Pt. 1, Rooks Co., to D. G. Hansen, Logan, **$154,670;** bit. reconstruction and single asph. surf. tr. 14.362 mi. S. P. 18-84 K 3167 (1), Russell Co., to A. F. Reis, National Bank of Topeka Bldg., Topeka, **$62,746.** CD 4/21—ENR 4/28.

Maine — State Hy. Dpt., Augusta, b. conc. 0.374 mi. F. A. Proj. No. FI UI 389 (2), Contr. 4, "Q" Augusta, to W. H. Hinman, Inc., North Anson, **$363,595;** bit. macad. 1.16 mi. F. A. Proj. No. S 64 (1), Wiscasset, to Sheldon Grant & Earl Keene, 700 Brighton Ave., Portland, **$53,191.** CD 4/29—ENR 5/5.

New Jersey—State Hy. Dpt., Trenton, Route 4 Parkway, Sects. 2B and 2C FP U-188 (9), Middlesex Co., to J. F. Chapman & Son, Inc., 1439 N. Broad St., Hillside, **$934,512.** Bids 4/28. CD 5/3—ENR 5/5, under LB.

Ont., Toronto—City, H. E. McCallum, mayor, c. con., Spadina Rd. to Dupont St. (two sections), to Kilmer Van Nostrand, Ltd., 215 Eglinton Ave. W., Approx. **$151,240.** M. Stewart, c/o owner, engr. CD 12/8/47—ENR 12/25/47.

EARTHWORK, WATERWAYS

BIDS ASKED

May 25

†Kentucky—U. S. Eng., 303 U. S. Court House, Nashville, Zone 1, Tenn., clearing, segments, Group 4, Wolf Creek Reservoir, Cumberland River. Serial No. Eng. 40-058-49-83. CD 5/11—ENR 5/19.

On or About June 15

†Ky., Maysville—U. S. Eng., Madison Ave. and 8 St. W., Huntington, 18, W. Va., local protection proj., along left descending bank Ohio River.

June 21

†Washington—Bureau Reclamation, Dpt. Interior, Prosser, rehabilitation pump discharge and siphon lines, Prosser Irrigation Dist., Yakima Proj., Spec. R1-46., adv. ENR 5/19.

LOW BIDDERS

†Louisiana—U. S. Eng., foot Prytania St., New Orleans, Zone 9, May 12, jetties at mouth of waterway, Serial No. Eng. 16-047-49-266, from Hough-Cowgur & Co., Inc., 320 N. 4 St., St. Louis, Mo., **$559,308.** CD 4/13—ENR 5/5.

†Missouri—U. S. Eng., 601 Davidson Bldg., Kansas City, Mo., May 10, Gillis St., Lydia Ave. and Prospect Ave. Pumping Plants, Serial No. Eng. 23-028-48-182, from Midland Constructors Inc., 222 W. Adams St., Chicago, Ill. **$145,900.** CD 4/13—ENR 4/21.

†Nebraska—U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo., May 11, levee along both banks of Nemaha River, at Missouri River, near Rulo, Serial No. Eng. 23-028-48-191, from Francis R. Orshek, Fremont, **$674,115.** Bids $794,555. CD 4/13—ENR 4/21.

†West Virginia—U. S. Eng., Madison Ave. and 8 St., W., Huntington, furnish crest gates, trash chute gate and bulkheads, Bluestone Dam, New River, Eng-46-022-48-101 Lots A and C, from The Palmer Bee Co., 1701 Poland Ave., Hamtramck, Mich., **$610,853** and **$909,-935** respectively; Let B, from Northwest Marine Iron Wks., 2516 N. W. 29 Ave., Portland, Ore., **$172,337.** CD 4/13—ENR 4/21.

CONTRACTS AWARDED

●†Louisiana—U. S. Eng., foot Prytania St., New Orleans, Zone 9, Bayou Cocodrie Drainage Structure, Concordia Parish, Serial No. Eng. 16-047-49-242, to T. L. James Co., Inc., Ruston, **$1,347,652.** Bids 4/29, awarded 5/11. CD 5/5—ENR 5/12, under LB.

†Texas—U. S. Eng., 606 Santa Fe Bldg., Galveston, dredging from Ship Canal to Liberty, from ship canal to north of Double Bayou, Galveston and Chambers Counties, to Bauer-Smith Dredging Co., Port Lavaca, **$524,160.** Bids 4/28. CD 5/6—ENR 5/12, under LB.

AIRPORTS AND AIRBASES

BIDS ASKED

June 22

Calif., Monterey — TERMINAL — Monterey Airport Dist., Monterey, 1 story, steel, frame wood airport terminal, incl. 2 airline space allotments, parking aprons and office space, $150,000. Plans deposit $25. Robert R. Jones, Ocean and Missions Sts., Carmel, archt. Edwin Verner, 40 1 St., San Francisco, structural engr. CD 4/26—ENR 5/26.

OFFICIAL PROPOSALS

LOW BIDDERS

†**Calif., Point Mugu**—MESS HALL—Office of Officer-in-Charge of Construction, U. S. Naval Air Missile Test Center, May 11, 1 story, rein.-con. mess hall and galley. Spec. 22226, from Alco Co., 5423 Flemish Village Lane, Los Angeles, **$271,019.** CD 4/21—ENR 4/28.

CONTRACTS AWARDED

Wis., Milwaukee — AIRPORT IMPRVS. — Milwaukee Co., Court House, Zone 3, draining, paving, lighting, fencing at General Mitchell Field, to J. D. Bonness, Inc., 1409 N. 27 St., Zone 8, **$842,131.** CD 4/26—ENR 4/28, under LB.

PUBLIC BUILDINGS

BIDS ASKED

May 25

Tenn., Jackson—Madison Co., Jackson, concrete, steel garage, concrete fdn., for County Hy. Dpt. Plans deposit $20. W. C. Harriso, Jackson, archt.

May 27

Mass., Middleboro — Town of Middleboro Housing Auth., Middleboro, seven 4 family unit, 2 story bsmnt., frame, Housing Proj. 200-1, Mayflower Ave. $300,000. Plans deposit $50. Dennedy & Smith, 687 Bolyston St., Boston, archts., Gordon MacNeil, Middleboro, structural engr. CD 11/17—ENR 12/9.

May 27

Miss., Sumner—West Tallahatchie Special School Dist., Sumner, high school. Approx. $300,000. Plans deposit $25. Former bids rejected. E. L. Malvaney, Millsaps Bldg., Jackson, archt. CD 5/6—ENR 5/12, under LB.

May 28

Ky., Cynthiana—Harrison Co., Cynthiana, 2 story, 59x244 ft. high school, incl. gymnasium. John T. Gilliz, 189 Walnut St., Lexington, archt. CD 3/10/47—ENR 3/20/47.

May 31

●**Wis., Jefferson**—Jefferson Co., Jefferson, 5 story, 92x182 ft., rein.-con., steel, concrete, stone, granite face courthouse. $1,600,000. Plans deposit $50. Childs & Smith, 20 N. Wacker Dr., archts.

June 1

Calif., Escalon — Dent Union Grammar School Dist., Escalon, Dent School. $300,000. Plans deposit $15. Koblik & Fisher, 2293 13 St., Sacramento, archts. CD 6/18—ENR 7/7.

Mass., Sutton—Town of Sutton School Dpt., Town Hall, 2 story, bsmnt., 61x158 ft. high school, incl. 58x70 ft. gymnasium and auditorium. $300,000. Plans deposit $50. Franklyn R. Williams, 20 Elm St., Worcester, archt. CD 3/24—ENR 4/28.

June 2

†**Va., Camp Lee (Br., Petersburg)**—U. S. Eng., First and Douglas Sts. N.W. Wash. 25, D. C., 2 story row house, Colonial type, family quarters, Serial No. 42-080-49-137. (38) M. Extended date. CD 10/26—ENR 11/11.

June 3

Ga., Atlanta—City Bd. Educ., City Hall, Henry Grady High School addn. $400,000. Shutze & Armistead, Candler Bldg., archts. CD 4/8—ENR 4/28.

●**Mass., Lawrence**—City of Lawrence Housing Auth., J. J. Sirois, exec. dir., 56 Melvin St., 256 Unit, 2 story veterans housing garden type apartments, Proj. 200-1, Osgood and Phillips Sts. $2,921,000. Plans deposit $100. CD 3/4—ENR 3/17.

June 9

Mo., Hayti—Pemiscot Co. Memorial Hospital, Hayti, 2 story, 44x142 ft. with 42x44 ft. L, brick, steel, concrete memorial hospital. $527,000. Ludwig Abt, 325 Railway Exchange bldg., Kansas City Mo., archt. CD 8/23/46—ENR 9/9/46.

S. C., Manning—Clarendon Co., Manning, hospital. Approx. $250,000. James & Durant, Sumter, archts. CD 1/26—ENR 2/17.

June 13

●**Ga., Atlanta** — City, City Hall, library. Approx. $1,000,000. Plans deposit $50. Extended date. Toombs & Creighton, Walton St., Atlanta, archts. CD 4/11—ENR 4/21.

About June 14

†**Wis., Alma**—U. S. Eng., 1217 U. S. Post Office and Custom House, St. Paul 1, Minn., 16x20 ft. utility bldg., etc. Lock and Dam 4.

†**Wis., Genoa**—U. S. Eng., 1217 U. S. Post Office and Custom House, St. Paul 1, Minn., 16x20 ft. utility bldg., etc. Lock and Dam 8.

†**Wis., La Crosse**—U. S. Eng., 1217 U. S. Post Office and Custom House, St. Paul 1, Minn., 16x20 ft. utility bldg., etc. Lock and Dam 7, near here.

†**Wis., Lynxville**—U. S. Eng., 1217 U. S. Post Office and Custom House, St. Paul 1, Minn., 16x20 ft. utility bldg etc. Lock and Dam 9.

†**Wis., Trempealeau**—U. S. Eng., 1217 U. S. Post Office and Custom House, St. Paul 1, Minn., 16x20 ft. utility bldg etc. Lock and Dam 6, near here.

Proposal Advertisements see pp. 77 to 80

U. S. Government

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2649 will be received by Bureau of Reclamation, Tracy, California, June 7, 1949, and then publicly opened for furnishing labor and materials and performing all work for the construction of earthwork, concrete lining, and structures for Delta-Mendota Canal, station 2149+80 to station 3024+80, Central Valley Project. The work is situated about 4 miles west of Newman, California, and extends southerly. Principal items are approximately: excavation, 5,760,000 cu. yds.; furnishing materials and placing 127,000 cu. yds. concrete; furnishing and erecting 243 M.b.m. lumber; furnishing and laying 2,100 lin. ft. concrete pipe; installing 270,000 lbs. gates and metalwork; and other work. Time allowed for completion will be 700 days. For particulars, address Bureau of Reclamation, Tracy, California; or Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner. (132)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2663) will be received by Bureau of Reclamation, Denver, Colorado, June 14, 1949, and then publicly opened for furnishing two 126-inch ring-seal gates with integral hydraulic hoists; and one control, including cabinet, piping, auxiliary equipment, and electrical equipment for Boysen Power Plant, Wyoming, Missouri River Basin Project. Delivery is desired within 330 days. For particulars, address Bureau of Reclamation, Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner. (151)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2673) will be received by Bureau of Reclamation, Denver, Colorado, June 14, 1949, and then publicly opened for furnishing two 48-inch hollow-jet valves with control units and two 48-inch ring follower gates with hydraulic hoists, for Boysen Unit, Wyoming, Missouri River Basin Project. Delivery is desired within 360 days. For particulars, address Bureau of Reclamation, Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner. (150)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2672) will be received by Bureau of Reclamation, Phoenix, Arizona, June 17, 1949, and then publicly opened for furnishing labor and materials and performing all work for the construction of Tucson-Cochise 115-kilovolt transmission line, Davis Dam Project. The work is situated between Tucson and Cochise, Arizona. The line will be a three-phase, single-circuit, wood-pole transmission line with overhead ground wires and will consist of approximately 2 miles of single-pole construction and 76 miles of H-frame-type construction. Time allowed for completion will be 400 days. For particulars, address Bureau of Reclamation, Aviola Building, Phoenix, Arizona; or Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner. (149)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2667) will be received by Bureau of Reclamation, Denver, Colorado, June 9, 1949, and then publicly opened for furnishing four 13.5-foot by 18.93-foot fixed-wheel gate frames and four lots of anchor bolts, for Hungry Horse Project, Montana. Delivery is desired within 310 days. For particulars, address Bureau of Reclamation, Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner. (145)

U. S. Government

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. RI-46) will be received by Bureau of Reclamation, Pasco, Washington, until 10 a.m., Pacific Standard Time, June 21, 1949, and then publicly opened for furnishing labor and materials and performing all work for rehabilitation of pump discharge and siphon lines, Prosser Irrigation District, Yakima Project, Washington. Principal items are approximately: furnishing and installing 15,000 feet of pipe, 15-inch diameter to 27-inch diameter, concrete, steel, or wood stave; removing 15,000 feet pipe; 25 cubic yards concrete; and other work. Time allowed for completion will be 180 days. The work is divided into 2 schedules. For particulars, address the Bureau of Reclamation, Federal Bldg., Yakima, Washington; P. O. Box 937, Boise, Idaho; Bldg. la., Denver Federal Center, Denver, Colorado; or Washington 25, D. C.

MICHAEL W. STRAUS, Commissioner. (153)

GOVERNMENT OF THE DISTRICT OF COLUMBIA, DIRECTOR OF HIGHWAYS, D. C., MAY 13, 1949, SEALED PROPOSALS will be received in Room 509, District Building, 14th Street and Pennsylvania, N. W., Washington 4, D. C., until 2:00 P.M., DAYLIGHT SAVING TIME, June 3, 1949, and then publicly opened and read for the construction of the reinforced concrete bridge deck consisting of roadway and sidewalk slabs for the superstructure of the East 14th Street Bridge over the Potomac River. Approximate quantities of the major items are 4,200 cubic yards of class BS concrete and placing 846,170 pounds of fabricated reinforcing steel which has been purchased by the District of Columbia. The attention of bidders is directed to the required contract provisions covering sub-letting or assigning the contract and to the use of domestic materials. Attention of the bidders is particularly called to the requirements as to the conditions of employment to be observed and minimum wage rates to be paid under the contract. The Manager, U. S Employment Service, for the District of Columbia is Mr. Robert A. Morrison, 503 'K' Street, N. W., Washington, D. C. Proposal form may be obtained in Room 427, District Building (Tel. National 6000, Extension 2378), upon deposit of a certified check in the amount of $25.00 made payable to the Collector of Taxes, D. C. (152)

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS, Foot of Prytania Street, New Orleans, La.—Sealed bids will be received in this office until 11:00 a.m., CST, 9 June 1949, and then opened for the construction of the terrace section of Texarkana Dam, Bowie County, Texas, in the New Orleans District. Principal quantities involved are approximately 2,500,000 cubic yards of compacted fill, 137,000 cubic yards of dumped riprap, 55,000 cubic yards of filter gravel, the construction of 2 miles of road and a slope drainage system. Further information on application. (111)

(Continued on page 78)

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OFFICIAL PROPOSALS
(Continued from page 77)

Bids: June 16, 1949 (139)

Sewage Treatment Plant

Sealed proposals on a unit price basis, for the Completion of Construction of the Sewage Treatment Plant and Sewers in the Village of Irvington, New York will be received at the office of the Clerk of the Municipal Board, Main Street, Irvington, New York, until 8:00 p.m. Eastern Daylight Saving Time, Thursday, June 16, 1949 at which time, or as soon thereafter as the Municipal Board may deem advisable, the said proposal will be opened. Bidders may attend the bid opening.

Plans and specifications may be procured at the office of the Clerk of the Municipal Board of the Village of Irvington, on and after Thursday, May 12, 1949, upon making a deposit of $25.00, which shall be returned to all bidders returning the plans in good condition.

Bidders must submit their proposals on the forms attached to and forming a part of the specifications, along with a bid bond in the amount of $5000 to insure acceptance of the award.

The Municipal Board reserves the right to reject any and all bids or proposals received, and also reserves the right to ward the contract to other than the lowest bidder, if in the opinion of a majority of the Municipal Board of the Village of Irvington, such action will be deemed by them to be for the best interests of the Municipal Board.

BY ORDER OF THE MUNICIPAL BOARD
VILLAGE OF IRVINGTON, NEW YORK
Dated May 5, 1949
FERDINAND H. HETTINGER,
Chairman
Municipal Board
Village of Irvington, New York

Bids: May 25, 1949 (138)

Beach Protection

NOTICE TO BIDDERS

Sealed Proposal Covering
Beach Protection (Five Stone Jetties)
At Fresh Pond Road and Abrams Landing
Town of Easthampton, Suffolk County, New York

Approximate Cost of Project—$35,100, will be received by Henry A. Cohen, Director, Bureau of Contracts and Accounts, Department of Public Works, The Governor Alfred E. Smith State Office Building, Albany, N. Y., on behalf of the Department of Public Works until 10:30 o'clock A.M., advanced standard time, which is nine thirty o'clock A.M. eastern standard time on Wednesday, May 25, 1949, when they will be publicly opened and read.

Each proposal must be made upon the form and submitted in the envelope provided therefor and shall be accompanied by a certified check made payable to the State of New York, Commissioner of Taxation and Finance, of 5% of the amount of the bid as a guaranty that the bidder will enter into the contract if it be awarded to him. The title of the work must be written on the front of the envelope, sealed and delivered to Henry A. Cohen, Director, Bureau of Contracts and Accounts, The Governor Alfred E. Smith State Office Building, Albany, N. Y. The blank spaces in the proposal must be filled in, and no change shall be made in the phraseology of the proposal. Proposals that carry any omissions, erasures, alterations or additions may be rejected as informal. Successful bidder will be required to give a bond conditioned for the faithful performance of the contract and a separate bond for the payment of the laborers and material men, each bond in the sum of 100% of the amount of the contract or contracts in excess of $500. Corporations submitting proposals shall be authorized to do business in the State of New York. Drawings and specifications may be examined free of charge at the following offices:

Guy W. Finch, Deputy Chief Engineer
The Governor Alfred E. Smith State Office Building, Albany, N. Y.
State Architect, 18th Floor, 270 Broadway, New York City.
J. J. Darcy, District Engineer, Montauk Highway at Little East Neck Road, Babylon, L. I., New York.

Drawings and specifications may be obtained from the Director, Bureau of Contracts and Accounts, The Governor Alfred E. Smith State Office Building, Albany, N. Y., or J. J. Darcy, District Engineer, Montauk Highway at Little East Neck Road, Babylon, L. I., New York, upon deposit of $5.00 for each set.

Refund in full will be made to bidders for one set of plans and specifications returned in good condition within 30 days of award of contract or the rejection of the bids. A 50% reimbursement will be made for the return in good condition of all other sets of the plans and specifications within 30 days following the award of the contract or the rejection of the bids.

Check for plans and specifications shall be made payable to the State of New York.

Proposal blanks and envelopes will be furnished without charge.

B. D. TALLAMY, Superintendent
New York State Department of Public Works

Bids: June 6, 1949 (148)

Pneumatic Tube System

THE PORT OF NEW YORK AUTHORITY
NEW YORK UNION MOTOR TRUCK TERMINAL
CONTRACT NYT-8

Sealed proposals for furnishing and installing a pneumatic tube system in the New York Union Motor Truck Terminal will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 11:30 A.M. Monday, June 6, 1949, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Chief Engineer, and copies will be furnished upon deposit of $10 per set. The deposit will be remitted if the documents are returned in good condition, not later than thirty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman,
Chairman

New York, May 19, 1949.

Bids: June 22, 1949 (147)

Auditorium

ONONDAGA COUNTY WAR MEMORIAL AUDITORIUM
Syracuse, New York

SEALED PROPOSALS will be received until 2 P.M., E.D.T. Wednesday, June 22, 1949, by R. W. Sollinger, County Purchasing Agent in Room 107 at Court House, Syracuse, N. Y., at which time they will be publicly opened and read in Supervisors Chambers on Fourth Floor; for a multi-purpose auditorium building of 9,000 seating capacity, located in the City of Syracuse, New York.

Proposals will be received separately on General Construction with Arch-rib concrete roof structure; Plumbing; Heating; Ventilation; Refrigeration and Rink Piping; Electrical.

Information for Bidders, Plans and Specifications may be examined in the offices of the County Purchasing Agent, or Edgarton and Edgarton, Architect-Engineer Associates, 401 Federal Building, Syracuse, N. Y., or Syracuse Builders' Exchange, 207 James Street, Syracuse 2, New York. General information pertaining to the design of the concrete arch roof structure may also be obtained from Ammann and Whitney, Consulting Engineers, 76 Ninth Avenue, New York, 11, N. Y. Information pertaining to Mechanical and Electrical Work may be obtained from Robson & Woese, Inc., 2030 Erie Blvd. E., Syracuse, New York.

One set of General Construction Drawings and Specifications are obtainable from the County Purchasing Agent by General Contractors by depositing $50.00. One set of each Mechanical or Electrical Drawings and Specifications are obtainable from the County Purchasing Agent by Mechanical or Electrical Contractors by depositing $15.00 for each set. Any sets in addition to the above are obtainable by prime bidders by paying $30.00 per set of General Construction and $10.00 per set for each Mechanical or Electrical. The $50.00 and $15.00 deposit for the initial sets will be refunded upon return of the Drawings and Specifications, in good condition, within one week after bid opening date. The $30.00 and $10.00 payments for additional sets will not be refunded. Other than prime bidders shall buy plans and specifications from the Architect-Engineer without refund.

The right is reserved to reject any or all bids.

Dated, Syracuse, N. Y., May 11, 1949.
ROBERT W. SOLLINGER
County Purchasing Agent
107 Court House
Syracuse, N. Y.

OFFICIAL PROPOSALS

Bids: June 15, 1949 (146)

Grain Elevator

PORT OF BOSTON AUTHORITY
SEALED BIDS FOR CONTRACT NO. 16
FURNISHING AND INSTALLING SPECIAL MACHINERY FOR GRAIN ELEVATOR HOOSAC PIER NO. 1
CHARLESTON, MASSACHUSETTS
MASS. STATE PROJECT W

Sealed Proposals will be received by the Port of Boston Authority at its office, Commonwealth Pier No. 5, South Boston, Mass., until 2:00 P.M. D.S.T. on Wednesday, June 15th, 1949 at which time and place the bids will be opened publicly and will be read aloud.

The Contract Documents, including Specifications and Drawings may be examined at the Port of Boston Authority, Office of the Chief Engineer, Commonwealth Pier No. 5, South Boston, Mass. on and after May 12th 1949 every weekday except Saturdays and Holidays between the hours of 9:00 A.M. and 4:00 P.M. Contractors desiring to bid on this work may withdraw plans and specifications upon payment of $25.00 for each set. Deposits will be refunded to Bidders only upon the return of plans and specifications in good condition within ten (10) days after the opening of bids.

Each bid must be accompanied by a certified check in amount of five per cent (5%) of the total bid price. A performance bond in the full amount of the contract will be required of the successful bidder.

Attention of bidders is called to the requirements of Chapter 461 Acts of 1935, as to condition of employment to be observed and minimum wage rates to be paid under the contract. No bid may be withdrawn within thirty days after the date of opening thereof.

The right is reserved to waive any informalities in or to reject any or all bids. The contract is subject to the approval by the Governor and Council.

PORT OF BOSTON AUTHORITY
By
James R. Nolen
Chairman

U. S. Government

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS, Foot of Prytania Street, New Orleans, La.—Sealed bids will be received in this office until 11:00 a.m., CST, 17 June 1949, and then opened for the construction of Schooner Bayou Control Structure approximately 18 miles south of Abbeville in Vermilion Parish, La., New Orleans District. Principal quantities involved are approximately 40,000 cu. yds. excavation, 4,600 cu. yds. concrete, 6,000 bbls. cement, 600,000 lbs. steel reinforcement, 17,500 lbs. structural and miscellaneous metal, steel sector gates, operating machinery, and miscellaneous items. Further information on application.

MICHAEL W. STRAUS, Commissioner.
(144)

Continued on page 79)

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ENGINEERING NEWS RECORD
Address: New York 18, N. Y.

OFFICIAL PROPOSALS
(Continued from page 78)

Bids: June 1, 1949 (123)

Electric Traveling Cranes

CONTRACT 397

SEALED BIDS will be received by the Board of Water Supply, at its offices, thirteenth floor, 120 Wall Street, New York City, until 10:00 A. M., Eastern Standard Time, on Wednesday, June 1, 1949, for Contract 397, for furnishing, testing and delivering one 5-ton and three 3-ton electric traveling cranes and appurtenances for the Rondout, West Branch and Kensico South effluent chambers of the Delaware aqueduct, all as set forth in the specifications.

No bid will be received and deposited unless accompanied by a certified check upon a National or State bank, drawn and made payable to the order of the Comptroller of the City of New York, in the amount of one thousand five hundred dollars ($1,500.00), for the proper execution of the contract.

At the above place and time the bids will be publicly opened and read. Pamphlets containing information for bidders, forms of bid and contract, specifications, contract drawings, requirements as to surety, etc., can be obtained at the office of the Chief Engineer, Room 1311, at the above address, upon application in person or by mail, by depositing the sum of five dollars ($5.00) in cash or its equivalent for each pamphlet. Within 30 days following the award of contract or rejection of bids, the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of four dollars ($4.00) will be made for each other pamphlet returned in acceptable condition. Arrangements will be made whereby prospective bidders desiring blueprints of the contract drawings for their own use may secure same, the cost thereof to be paid by them. For further particulars, apply at the office of the Chief Engineer at the above address.

IRVING V. A. HUIE, President, HENRY HESTERBERG, RUFUS E. McGAHEN, Commissioners, Board of Water Supply; RICHARD H. BURKE, Secretary.

Bids: May 31, 1949 (143)

Construction of Facilities for Bridge Approach

NOTICE TO CONTRACTORS: Sealed bids or proposals for Contract No. 11 will be received by the Mystic River Bridge Authority at its office, Six Beacon Street, Boston 8, Massachusetts, until 12 noon, May 31, 1949, and at that time publicly opened and read. The work to be done consists of the construction of facilities for the Charlestown approach of the Mystic River Bridge. Plans and specifications may be obtained at the office of Charles A. Maguire and Associates, 16 Cornhill, Boston 8, Massachusetts, or J. E. Greiner Company, 12nd St. Paul Street, Baltimore 2, Maryland, on payment of $10.00 which is not returnable. Proposal guaranty shall consist of a certified check for twenty thousand dollars ($20,000.00) payable to the order of Mystic River Bridge Authority. The successful bidder will be required to furnish a bond for the faithful performance of the contract in the full amount of the contract. Attention is called to the minimum rate of wages to be paid on the work as determined by the Commissioner of Labor and Industries under the provisions of Chapter 161 of the Acts of 1935. Complete information may be obtained from the Authority. Right is reserved to waive any informality in or to reject any or all proposals. A bid which includes for any item a price abnormally high or low may be rejected as unbalanced.

MYSTIC RIVER BRIDGE AUTHORITY
By Ephraim A. Brest, Chairman
Date May 5, 1949.

Bids: May 31, 1949 (142)

Construction of Substructure & Superstructure

PENNSYLVANIA TURNPIKE COMMISSION
Harrisburg, Pennsylvania
NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania, until 10:00 A.M. (Eastern Daylight Saving Time), the 31st day of May, 1949, and immediately thereafter will be taken to the Public Utility Commission Hearing Room No. 1, North Office Building, State Capitol, Harrisburg, Pennsylvania, and immediately publicly opened and read aloud, for the following contract:

For construction of substructure and superstructure including widening of the Swatara Creek Channel, Turnpike Section 23-A-1, Swatara Creek Bridge, part of the Philadelphia Extension, in Lower Swatara and Londonderry Townships, Dauphin County, Commonwealth of Pennsylvania. This section being situated as follows:

Beginning at a point on the west bank of the Swatara Creek (Dauphin County) at Turnpike Station 286+45.5 on the Turnpike centerline thence in an easterly direction across the Swatara Creek to Turnpike Station 292+50.50, on the Turnpike centerline a distance of 0.117 miles.

The approximate quantities of the principal items are as follows:

Substructure

Class 1 Excavation—26,000 cubic yards.
Class 2 Excavation—2,074 cubic yards.
Concrete Piles—32' Lgt.—16" Dia.—800 lineal feet.
Concrete Piles—20' Lgt.—16" Dia.—500 lineal feet.
Class A Concrete—1,505 cubic yards.
Class B Concrete—1,185 cubic yards.
Reinforcing Bars—70,000 pounds.

Superstructure

Class A Concrete—1,105 cubic yards.
Reinforcing Bars—235,000 pounds.
Fabricated Structural Steel—1,610,000 pounds.

In general, the principal parts of the work include:

(a) Pier and Abutment Excavating.
(b) Creek Channel widening.
(c) Construction of Concrete Substructure.
(d) Construction of a 6 Span Continuous Steel Deck Girder Superstructure.
(e) Construction of Reinforced Concrete Bridge Deck and Integral Wearing Surface.

Copies of plans, specifications and other contract documents will be on file and open to public inspection at the office of the Pennsylvania Turnpike Commission located at Harrisburg, Pennsylvania on 12 May 1949.

Specifications and contract documents may be obtained from the Commission upon deposit of Ten Dollars ($10.00) for each set, such deposit to be refunded in full to any actual bidder upon return of such documents in good condition within five (5) days after date of the opening of bids. Refunds will be made for all plans and contract documents returned, if the project is withdrawn from letting by the Pennsylvania Turnpike Commission. Remittances are payable to the Pennsylvania Turnpike Commission and must accompany requests for drawings and specifications.

The character and amount of bid security to be furnished by bidder is stated in the Instructions to Bidders.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE COMMISSION
Harrisburg, Pennsylvania
5May1949

James F. Torrance
Secretary and Treasurer

Bids: July 7, 1949 (141)

Construction of Housing & Storage Building

NOTICE IS HEREBY GIVEN that separate proposals submitted in sealed envelopes for general construction work, heating and ventilating work, plumbing work and electrical work for the furnishing of all materials and equipment together with all labor for the construction of an additional housing and storage building in connection with the treatment plant of the North St. Paul Sewer District in the Town of Irondequoit and the increase, improvement and reconstruction of the facilities thereof and the appurtenances thereto and the modification of the existing plan of sewage in such sewer system in accordance with proposed contract, plans, specifications, information for bidders and estimates prepared by William H. Ginnity, Civil Engineer, will be received by the Town Board of the Town of Irondequoit, County of Monroe, New York, at the office of the Town Clerk, 1340 Ridge Road, Irondequoit (Rochester 5), New York until 7:30 o'clock P.M. Eastern Daylight Time (6:30 o'clock P. M. Eastern Standard Time) on July 7, 1949, at which place and hour they will be publicly opened and read aloud. The information for bidders, form of proposal, plans and specifications and form of contract may be secured at the office of Fred E. Hussey, Town Clerk, 1340 Ridge Road East, Irondequoit (Rochester 5), New York, and copies thereof may be obtained upon the deposit of Ten Dollars ($10.00) for each set, which will be refunded when the plans and specifications are returned within five days after bids are opened and provided a bid is submitted.

The Town Board reserves the right to waive any informalities in, or to accept any or reject any or all proposals presented, or to write new proposals.

All bids will be on the form furnished by the Town Clerk of the Town of Irondequoit prepared as set forth in Information For Bidders and enclosed in a sealed envelope bearing on its face the name and address of the bidder and the title of the work to which the enclosed proposal relates and shall be delivered to the Town Clerk of the Town of Irondequoit, Monroe County, New York, at his office, 1340 Ridge Road East, Rochester 5, New York.

Each bidder must deposit with his bid a certified check payable to the order of the Supervisor of the Town of Irondequoit in an amount not less than five per centum of the base bid, or a bond in such amount, with sufficient sureties to be approved by the Supervisor, conditioned that if the proposal is accepted such bidder will enter into a contract for the same, and that he will execute such further security as may be required for the faithful performance of the contract, and in the form and subject to the conditions provided in the Information For Bidders. No bidder may withdraw his bid within twenty-one (21) days after the actual date of opening thereof.

Dated May 5, 1949

By order of the Town Board of the Town of Irondequoit.

FRED E. HUSSEY,
Town Clerk.

Bids: June 15, 1949 (140)

General Construction

PROPOSALS

SEALED PROPOSALS WILL BE RECEIVED at the Office of the Municipal Housing Authority of the City of Utica, New York, Washington Courts, Whitesboro Street, Utica, N. Y., or at the Office of the Architects, Kinne and Pennock, 7 Hopper Street, Utica, N. Y. until 11:00 A.M., D.S.T. June 15, 1949 and thereafter and until 2:15 P.M. on the same day at the Common Council Chamber in the City Hall, Utica, N. Y. at which time and place the same will be opened and publicly read by the Municipal Housing Authority of the City of Utica, N. Y.

The sealed proposals are to be for:

1. General Construction
2. Heating
3. Electrical Work
4. Plumbing

for Post-War Project NYS-27 Site C located in South Utica on Merriline, Hazelhurst and Hillcrest Aves. in the City of Utica, N. Y.

The Contract documents may be examined at the office of the Municipal Housing Authority of the City of Utica, N. Y., Washington Courts, Whitesboro Street, Utica, N. Y., or at the office of the Architects, Kinne and Pennock, 7 Hopper Street, Utica, N. Y. and copies thereof obtained upon payment of $25.00 as a deposit to guarantee the safe return thereof.

Checks offered as payment for the documents must be made payable to the order of the Authority.

MUNICIPAL HOUSING AUTHORITY
OF THE CITY OF UTICA, N. Y.
FRANK A. EMMA
FRANK A. EMMA, CHAIRMAN

(Continued on page 80)

CONTRACTORS WATCH THIS SECTION

for New Projects

Publish your announcements thru the "Proposal Section" of Engineering News-Record and get their bids.

OFFICIAL PROPOSALS
(Continued from page 79)

Bids: May 25, 1949 (119)

State Highway Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Chapter 63 Laws of 1936, as amended, and special provisions for projects financed with federal aid funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time on Wednesday, May 25, 1949 by Henry A. Cohen, Director, Bureau of Contracts & Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., and at the office of the District Engineers noted below, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for plans and proposal forms for each contract containing 1 to 15 sheets is $5.00; 16 to 30 sheets, $10.00; over 30 sheets, $20.00. A refund will be made in full to bidders for the return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 1				
		G. L. NICKERSON, Dist. Engr., 333 Broadway, Albany, N. Y.				
Rensselaer & Saratoga	CHAP. 236 LAWS 1946	Bridge Across the Hudson River, Mechanicville & Town of Schaghticoke	0.22	240' Thru Truss & Plate Girder Appr. Conc. 8" Thk., 24' Wdt.	$26,000 Plans $5.00	$446,764.20
		DISTRICT No. 3				
		WM. ROBINSON, Dist. Engr., 301 E. Water St., Syracuse, N. Y.				
Onondaga	RC 49-53	Baldwinsville Vill.: Downer, S. H. 1634 Syracuse and Oswego Sts., Fulton-Baldwinsville, Pt. 3, S. H. 9083	3.18	Conc. Fdt. (Widening)	$6,000 Plans $5.00	$104,000.00
		DISTRICT No. 4				
		A. R. MULLIGAN, Dist. Engr., Barge Canal Terminal, Rochester, N. Y.				
Genesee	FA-C 49-2	City of Batavia: Main Street Proj. U706-2	0.77	Asph. Conc. Type 2A	$25,000 Plans $5.00	$423,000.00
Monroe	E 172	Manitou Road, E172	0.37	Alpha $60.27 Cant. Deck 2 at 84' 2 Anchor Spans at 44' ea. Suspended Span-100'	$30,000 Plans $10.00	$539,542.50
		DISTRICT No. 5				
		C. R. WATERS, Dist. Engr., 65 Court St., Buffalo, N. Y.				
Chautauqua	PSC 9209	Elim. of Grade Crossing of South Work Street with Erie R. R.: Vill. of Falconer	0.36	Alpha $230.00 Rs. 4 Spans 58' 9", 70', 68' 7", 59' 4" Asph. Conc. Opt.	$21,000 Plans $5.00	$368,000.00
Erie	PSC 4234 8253	Elim. of Grade Crossing of N. Y. C. R. R. & Penn. R. R. with Ridge Road	0.68	Alpha $371.00 IBs. 3 at 90' 3", 2 at 51' 6" Asph. Conc. Opt.	$30,000 Plans $5.00	$507,000.00
		DISTRICT No. 8				
		J. S. BIXBY, Dist. Engr., Pleasant Valley Rd., Poughkeepsie, N. Y.				
Westchester	RC 49-54	Pines Bridge-Whitehall Cors., S. H. 9024	4.78	12,850 L. Ft. Opt. Guard Railing	$1,000 Plans $5.00	$30,000.00
		DISTRICT No. 9				
		F. W. DONOVAN, Dist. Engr., 71 Frederick St., Binghamton, N. Y.				
Broome	FAS SH 49-9	Union Center-Newark Valley, Pt. 1, Proj. 8338-1	3.03	Asph. Conc. Opt.	$25,000 Plans $5.00	$423,000.00
Sullivan	FA SS 49-16	Forestdale-Falls Mill 8275-1.	Proj. 1.43	Alpha $32.97 I-Beam 92' Grd. Grav. Bit. Mulch.	$14,000 Plans $5.00	$255,000.00
		DISTRICT No. 10				
		J. J. DARCY, Dist. Engr., Montauk Hwy at Little E. Neck Rd., Babylon, L. I., N. Y.				
Bronx	N. I. T. 49-1	New England Thruway Cont. 2A	0.52	Grading & Drainage	$43,000 Plans $5.00	$725,000.00
Nassau	RC 49-55	Conduit Blvd., Pt. 3, S. H. 1699A	0.04	Misc. Drainage and Structure	$2,000 Plans $5.00	$35,000.00

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by cash, draft or certified check payable to the order of "State of New York, Commissioner of Taxation & Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders". When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPT. OF PUBLIC WORKS

Bids: May 31, 1949 (135)

Water Works System

NOTICE TO CONTRACTORS
EXTENSION NO. 3 TO
ROTTERDAM WATER DISTRICT NO. 1,
ROTTERDAM, NEW YORK

Sealed bids for the construction of a water works system will be received by the Board of Water Commissioners in the Assembly Hall on the top floor of the Town Hall on Vinewood Avenue in the Town of Rotterdam, Schenectady County, New York, until 8:00 P.M., Eastern Daylight Saving Time, May 31, 1949, and then at said rooms publicly opened and read aloud.

The Information for Bidders, Form of Contract, Plans, Specifications and Form of Performance Bond may be examined at the office of the Town Clerk in the Town Hall on Vinewood Avenue, Town of Rotterdam, New York and at the office of Keis & Holroyd, Consulting Engineers, 257 Broadway, Troy, New York. Copies thereof may be obtained at the said office of Keis & Holroyd upon payment of $25.00 for each set. Any bidder upon returning such set in good condition, will be refunded his payment and any non-bidder upon so returning such set promptly will be refunded $20.00.

The Board of Water Commissioners, Rotterdam Water District No. 1, Rotterdam, New York reserves the right to waive any informalities in, or to reject, any or all bids.

A certified check made payable to the order of the Board of Water Commissioners of Rotterdam Water District No. 1, Rotterdam, New York, in the amount of five per centum (5%) of the bid must be deposited by each bidder with his bid as a guarantee that in case the contract is awarded to him, that he will within 5 days thereafter, execute such contract and furnish a satisfactory performance bond. On failure to do so he shall forfeit the deposit as liquidated damages, and acceptance of the bid will be contingent upon the fulfillment of this requirement by the Bidder.

The successful bidder will be required to furnish a performance bond satisfactory to the Board of Water Commissioners of Rotterdam Water District No. 1, Rotterdam, New York in the amount of the contract, and having as surety thereon such surety company or companies as are acceptable to the Board of Water Commissioners of Rotterdam Water District No. 1, Rotterdam, New York.

No bidder may withdraw his bid within 45 days after the date set for the opening thereof. Any bid may be withdrawn prior to the above scheduled time for opening of bids or authorized postponement thereof.

WILLIAM ELLERS
Secretary

Dated: May 2, 1949
KEIS & HOLROYD
CONSULTING ENGINEERS
TROY, NEW YORK

Bids: June 1, 1949 (905)

Barge Canal Improvement

NOTICE TO BIDDERS

Sealed proposals in duplicate covering construction of

Contract—Guard Gates, Spillway and performing other miscellaneous work at Herkimer (Mohawk) Herkimer County, N. Y.
Contract—Guard Gates and performing other miscellaneous work at Little Falls, Herkimer County N. Y.

will be received by Henry A. Cohen, Director, Bureau of Contracts and Accounts Department of Public Works, The Governor Alfred E. Smith State Office Building, Albany, N. Y., on behalf of the Department of Public Works until 10:30 o'clock A. M. (Advanced Standard Time which is 9:30 o'clock A. M. Eastern Standard Time) on Wednesday, June 1, 1949, when they will be publicly opened and read.

Each proposal must be made upon the form and submitted in the envelope provided therefor and shall be accompanied by a certified check made payable to the State of New York, Commissioner of Taxation and Finance, of 5% of the amount of the bid as a guaranty that the bidder will enter into the contract if it be awarded to him. The title of the work must be written on the front of the envelope, sealed and delivered to Henry A. Cohen, Director, Bureau of Contracts and Accounts, The Governor Alfred E. Smith State Office Building, Albany, N. Y. The blank spaces in the proposal must be filled in, and no change shall be made in the phraseology of the proposal. Proposals that carry any omissions, erasures, alterations or additions may be rejected as informal. Successful bidder will be required to give a bond conditioned for the faithful performance of the contract and a separate bond for the payment of laborers and material men. Corporations submitting proposals shall be authorized to do business in the State of New York. Drawings and specifications may be examined free of charge at the following offices:

Guy W. Finch, Deputy Chief Engineer, The Governor Alfred E. Smith State Office Building, Albany, N. Y.
State Architect, 18th Floor, 270 Broadway, New York City.
Lacy Ketchum, District Engineer, 109 N. Genesee St., Utica (1) N. Y.
Wm. Robinson, District Engineer, 301 E. Water St., Syracuse (1) N. Y.
A. R. Mulligan, District Engineer, Barge Canal Terminal, Rochester (1) N. Y.
Charles H. Waters, District Engineer, 65 Court St., Buffalo (2) N. Y.

Drawings and specifications may be obtained from the Director, Bureau of Contracts and Accounts, The Governor Alfred E. Smith State Office Building, Albany, New York, upon deposit of $10.00 for each set.

Refund in full will be made to bidders for one set of plans and specifications returned in good condition within 30 days of award of contract or the rejection of the bids. A 50% reimbursement will be made for the return in good condition, of all other sets of the plans and specifications within 30 days following the award of the contract or the rejection of the bids.

Checks for plans and specifications shall be made payable to the State of New York.

Proposal blanks and envelopes will be furnished without charge.

B. D. TALLAMY, Superintendent
N. Y. State Department of Public Works

Bids: June 9, 1949 (120)

Sewage Treatment Plant and Appurtenances

TOWN OF PLAINVILLE, CONNECTICUT
NOTICE TO CONTRACTORS

Bids will be received by the Town of Plainville on June 9, 1949, at 3:30 P. M., Eastern Daylight Saving Time, for the construction of a Sewage Treatment Plant and Appurtenances consisting of:

Contract II—Sewage Treatment Plant
Contract IV—Fence

Information, plans and specifications may be obtained at the offices of Rowe, Albertson & Associates, Engineers, 110 William Street, New York City, New York, and at the office of the Board of Selectmen, Town Hall, 29 Pierce Street, Plainville, Connecticut, between the hours of 10 A. M. and 4 P. M. daily except Saturdays, Sundays and holidays.

THE BOARD OF SELECTMEN OF THE TOWN OF PLAINVILLE, CONNECTICUT
By: RONALD W. HYATT
First Selectman

DATED, April 16, 1949

SEARCHLIGHT SECTION

WANTED

ENGINEERS

Senior Associate Grades.. $6191 to $6908 per year
Associate Grades ..... $5341 to $6058 per year
Senior Assistant Grades. $4570 to $5048 per year
IN ARCHITECTURAL, CIVIL, SANITARY, ELECTRICAL, MECHANICAL AND STRUCTURAL SPECIALTIES

To prepare plans, specifications and drawings and to supervise construction on a $38,000,000.00 water system expansion program and other municipal projects.

Placement is to be made from lists of applicants qualifying in examinations held daily from May 4, 1949 to August 5, 1949.

It is contemplated that the salaries listed above will be adjusted upward $239.00 per year on July 1 1949.

Apply immediately stating background and experience, also grade and specialty in which you are interested, to

DETROIT CIVIL SERVICE COMMISSION
15th Floor Water Board Bldg. Detroit 26, Mich.

MAN WANTED

SALES ENGINEER

For selling and promoting asphalt construction and materials. Permanent position and excellent opportunity for right man. State qualifications and references.

SW-8369, Engineering News-Record
330 N. Michigan Ave., Chicago 11, Ill.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

WANTED—ENGINEERS, Architects, Draftsmen experienced in the design of sewers, sewage treatment plants, water treatment plants and industrial buildings. Also engineers to supervise construction. State qualifications, experience, salary requirements and date available. P-1155, Engineering News-Record.

WANTED: ESTIMATOR for heating, plumbing, air-conditioning contractor located in Central Pennsylvania. State age, qualifications, experience and salary expected in first letter. P-8753, Engineering News-Record.

CHECKER-DETAILERS for Structural and misc. shop drawings. Permanent position. Hospitalization, health and accident insurance available. Vacations and holidays with pay. State education, experience, age, salary desired and when available. The J. T. Edwards Company, 1241 McKinley Avenue, Columbus 8, Ohio.

ESTIMATOR FOR Building Construction projects running over $5,000,000.00. Must be experienced, quick and accurate in taking off quantities for excav., concrete, forms, masonry, etc. Write Fleisher Eng. and Constr. Co., P. O. Box 63, Kensington Station, Buffalo, N. Y.

ESTIMATOR: EXPERIENCED quantity survey estimator and project manager wanted for permanent position in a growing organization. Give complete experience record and references. P-8894, Engineering News-Record.

REINFORCING BAR Detailer for work in New York City. Preferably experienced in both detailing and estimating for reinforcing bar fabricators. Write experience fully, stating also salary desired. P-8801, Engineering News-Record.

WANTED: MANAGER for painting business. Experienced in estimating, supervising, and managing painting and decorating business. State qualifications, experience, salary required and date available. P-8811, Engineering News-Record.

WANTED: A good, experienced, architectural draftsman for long-established, small office engaged in general practice. Permanent position for right man looking for place to settle and make his home. Non-industrial, cultured community of 50,000 with two 4-year universities—Illinois Wesleyan and Illinois State Normal. Address Schaeffer, Hooton & Wilson, Architects, Peoples Bank Building, Bloomington, Illinois.

When Answering

BOX NUMBERS

to expedite the handling of your correspondence and avoid confusion, please do not address a single reply to more than one individual box number. Be sure to address separate replies for each advertisement.

EMPLOYMENT

AND OTHER BUSINESS OPPORTUNITIES

UNDISPLAYED RATE

(Not available for equipment advertising)

$1.20 a Line, minimum 4 lines. To figure advance payment count 5 average words as a line.

INDIVIDUAL EMPLOYMENT WANTED undisplayed advertising rate is one-half of above rate, payable in advance.

Box Numbers in care of our New York, Chicago and San Francisco Offices count as one additional line.

Replies are forwarded each day as received at each of the offices mentioned without additional charge.

Discount of 10% is allowed if full payment is made in advance for 4 consecutive insertions.

DISPLAYED RATE

The advertising rate is $11.50 per inch for all advertising appearing on other than a contract basis. Contract rate quoted on request.

An advertising inch is measured 7/8 inch vertically on one col., 3 col.—30 inches to a page. E.N.R.

WANTED

Old and well established general contracting firm wishes to employ a responsible man capable of doing estimating, some architectural drafting and supervision of men. Man must be capable of handling job from start to finish.

Compensation—Substantial salary plus bonus or salary and profit sharing basis. Right party can write his own ticket.

In reply send full details in first letter stating salary desired, age, references of past employers and whether or not interested in becoming a permanent resident of the state of Florida.

***Direct reply to* P. O. Box 240**
Bradenton, Florida

POSITIONS VACANT

WANTED: SUPERINTENDENT for heating, piping and air conditioning contractor located in Central Pennsylvania. Experience necessary. Salary plus commission. Send references and state age and experience in first letter. P-8946, Engineering News-Record.

WANTED IRRIGATION Engineer, with at least ten years experience in planning, designing and estimating distribution systems and drainage works and with basic knowledge of agronomy. U. S. engineering firm with initial assignment Near East. P-8917, Engineering News-Record.

ENGINEERS: UNIVERSITY professors in all fields. Master's and Doctor's qualify unusually fine positions $4500-7000 nine months. Instructors, bachelors. Give phone, photo, qualifications. Cline Teachers Agency, East Lansing, Mich.

MIDWEST CONTRACTOR wants estimator capable of managing small building construction business. Commercial and institutional work principally. Exceptional opportunity. Salary and share of profits will enable experienced party to become part owner. State age, qualifications, complete experience record, references, salary. P-8959, Engineering News-Record.

POSITIONS WANTED

STRUCTURAL DESIGN Engineer. Graduate C.E., Age 45, 23 years experience designing steel, concrete and timber structures, together with any type of foundation. Thoroughly competent to execute complete structural designs on any type building or waterfront structure, and supervise the execution of working drawings. Correspondence invited for position of responsibility PW-7208, Engineering News-Record.

PROJECT MANAGER: General or Job Superintendent; 30 years experience; heavy and light construction; housing; apartments; schools; hospitals; office buildings; chemical; industrial plants; powerhouses; handle all trades including mechanical and allied work. PW-8779, Engineering News-Record.

SUPERINTENDENT, 36, experience includes commercial, industrial, housing, federal, also estimating and purchasing. Excellent references. Available May 15. PW-8807, Engineering News-Record.

CIVIL ENGINEER; 34; married; registered; 10 years experience design, construction, maintenance in industrial and process plants including buildings, docks, roads, utilities, mechanical equipment, machine tools. PW-8872, Engineering News-Record.

(Continued on page 82)

WANTED

CONSTRUCTION SUPERINTENDENT

WITH REFINERY AND HEAVY CONSTRUCTION EXPERIENCE. LOCATION SOUTH NEW JERSEY AND EASTERN PENNSYLVANIA. STATE AGE, EXPERIENCE AND FULL PARTICULARS.

P-8582, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

GRADUATE CIVIL ENGINEER

with broad experience, a substantial portion of which has been in hydraulics. An excellent opportunity with a large public utility located in eastern Pennsylvania. Apply by letter stating education, experience and salary requirements. Address

P-8786, Engineering News-Record
330 West 42nd Street, New York 18, N. Y.

EXPERIENCED ESTIMATOR

Wanted by established Phila. concern for Sewers, Highways, Bridges, Treatment Plants. State Salary, experience, and when available.

P-8955, Engineering News-Record
330 W. 42 St., New York 18, N. Y.

WANTED

Structural Designers

Steel and reinforced concrete, experienced on industrial buildings. Permanent positions. Apply by letter stating age, education, experience and salary.

R. H. MAVEETY
53 W. Jackson Blvd. Chicago 4, Ill.

WANTED

Sub-Contractor

For the construction of eight concrete structures in Bradford County, Pa.

Write

HIGHWAY PAVING COMPANY
1408 Edgevale Road Phila. 31, Pa.

REINFORCING STEEL MANAGER

Fabrication, placing and detailing experience essential. Permanent position in San Francisco area.

P-8937, Engineering News-Record
68 Post St., San Francisco 4, California

ESTIMATOR

For underground power and telephone conduit work and gas main construction in greater Boston. Experience essential. Permanent position. Apply by letter only stating qualifications, experience, age, former employers, references, and salary required.

BOND BROS., INC.
77 Ferry Street Everett, Mass.

SEARCHLIGHT SECTION

WANTED

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Structural Engineer... 5,000. to 6,250. per year*
Civil Engineer I ..... 5,000. to 6,250. per year*
Mechanical Engineer I. 5,000. to 6,250. per year*
Mechanical—Electrical Engineer I 5,000. to 6,250. per year*
Mechanical—Electrical Engineer II 4,200. to 5,250. per year*
Architectural Draftsmen 3,300.
Architectural Designer I 4,800. to 6,000. per year*
Architectural Designer II 4,200. to 5,250. per year*

*—First figure indicates tentative starting salary—5% increase annually for 5 years.

Apply immediately, giving education, experience, professional registration, references, etc.

Department of Public Improvements
200 West Franklin Street
Baltimore 1, Maryland

WANTED

JUNIOR APPRAISAL ENGINEER

To assist Insurance Department of independent oil company set up equipment records and establish insurable values for oil production, refining, transportation and marketing properties. Applicants should have an engineering degree and at least one year's practical appraisal experience. Location—Middle West. Limited amount of traveling required. Good opportunity for continuous work and advancement.

P-8814, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

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LAYOUT MAN

(Instrument Man)

By large contractor operating in middle-western states. Permanent position. Must be highest grade man who is a college graduate and has several years' field experience laying out abutments, sewers, dams, flood control structures, etc. High starting salary and unusual opportunity for suitable man as several of our executives worked up from instrument men. State age, education, experience, present salary and references who will not be contacted without your consent.

P8868, Engineering News-Record
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Permanent position, good pay, for high class SOBER superintendent capable of taking complete charge of all types of plant mix ASPHALT JOBS, seal coat and stabilized base work. Character and experience references required. Give full particulars in first letter. Location in Iowa.

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Experienced highway and railroad overpass, viaducts, industrial structures.

Write fully Mr. McDONALD
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POSITIONS WANTED

(Continued from page 81)

SUPT. ASPHALT Paving work General construction 25 years experience operate any type mix estimate cost and do work economically. Chemical Engineer. Speak Spanish. PW-8859, Engineering News-Record.

AMBITIOUS CHIEF Accountant experienced in corporate setups, finances and joint venture projects desires position with reputable engineering or construction firm. Twenty-five years experience large and small projects all types construction. Now employed but desire change. A-1 references and bond, latest cost methods used. PW-8888, Engineering News-Record.

CIVIL ENGINEER, age 39—15 years experience in the field and office on location and topographic surveys, highways, pipelines, heavy construction. Desire foreign position. PW-8891, Engineering News-Record.

STRUCTURAL ENGINEER, Cornell graduate, licensed, 25 years varied experience in design and construction of subways, buildings, foundations, docks, statically indeterminate analysis, etc. PW-8907, Engineering News-Record.

TRANSITMAN WANTS position in South America. PW-8906, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT, highway railroad, general plants, stone quarries, general excavation, supervision of heavy machinery on traffic. PW-8912, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT — 27 years experience in complete charge of projects consisting of: chemical plants; slip-form concrete structures; material handling and process equipment installations; grain elevators and dryers; cement plants. Under fifty years of age. Will go any location. Further details on interview. PW-8914, Engineering News-Record.

MECH. ENG.—B.S., Licensed, 28, single, 5 years broad design experience heating, plumbing, ventilation and power plant installations. Desire foreign position. Will start at bottom. PW-8925, Engineering News-Record.

CONSTRUCTION OFFICE man, accountant, 40, wants job with reliable company. Fully experienced in full charge of all paper work. 4 years in So. Fla. Prefer Florida or Gulf States. J. J. Quirk, 433-101 Street, Brooklyn, N. Y.

CONTRACTOR'S RIGHT Hand Man: age 36, experienced Manager-Estimator-Purchasing Agent—in Commercial, Multi Residential, Industrial Bldg. Construction—including all utilities—and engineered construction covering, airports, marine facilities, railroads, roads, and quarry operation. Desires permanent position as Manager, Estimator, or Purchasing Agent for Gen. Contractor; or as Area Sales Manager for Cement co., bldg. supply co., or w/equipment mfg. or dealer. Good references. In reply state exact salary connected with position open. PW-8941, Engineering News-Record.

Attention Contractors

LIVE WIRE! Project Mgr. or Gen. Supt. Graduate Reg. Engineer. Have complete organization Ch. Engineer foreman etc. Dams, Bridges—Harbor Work — Power Plants — Tunnels — Refineries — Sewerage Disposal Plants — Public & Industrial Bldgs. Expert on Heavy Foundations—Mass Concrete. Understand plant layout & equipment. Labor relations. Closing out large project on the East coast. Willing to travel anywhere. States or South America. Resume of experience furnished as well as references. Age 41. Best of health.

PW-8905, Engineering News-Record
330 West 42nd Street, New York 18, N. Y.

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First

POSITIONS WANTED

CIVIL ENGINEER, Structural Draftsman. German graduate. Longtime British overseas, one year U.S.A. experience. Moderate salary. PW-8940, Engineering News-Record.

SUPERINTENDENT CONSTRUCTION, 25 years institutional, industrial or commercial projects. Anywhere. Engineer. Salary $150.00. PW-8963, Engineering News-Record.

REGISTERED GRADUATE Civil Engineer, 35 years experience private construction and government service, buildings, warehouses, piers, lighthouses, air-strips, dwellings. Administration, management (technical), cost analyses, design, estimates, specifications, contracts, safety, supervision. Available 1 June, 1949. PW-8950, Engineering News-Record.

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SALES TERRITORY Wanted. Energetic established manufacturer's representative wants Missouri and/or Middle West territory. Building, mining, road supplies, tools, equipment. Graduate mining engineer with fifteen years field and sales experience with following. RA-8797, Engineering News-Record.

SALES EXECUTIVE. Technical background and long experience all phases building industry. Qualified to plan promotion and manage sales of building products or engineering services. Eastern seaboard with New York headquarters only. SA-8903, Engineering News-Record.

FOR SALE

(100) metal railroad curves; triangular boxwood scales; Gurley hand level; beam compass; pair extension dividers; drawing instruments; Chesterman steel tape. All good; some new. FS-8778, Engineering News-Record.

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Cat. #D-6 with Cardwell Sideboom & Dozer. Good. $3750.00.

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OR LEASE WITH PURCHASE OPTION

Caterpillar 12 Motor Patrols	$5,750.00
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Colby Model 200 electric powered Whirley cranes, 45 ton at 30 foot radius. Excellent condition.

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1600 HP General Motors Engines, 720 RPM

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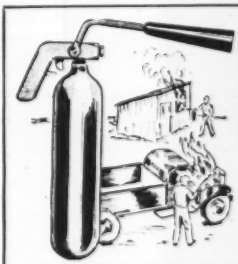

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Protect your motorized equipment, tool sheds, work camps, and even your own home and garage. Kills flash fires instantly. Tank is 14" x 3½" can be used more than once. Charged—refillable, good until used, weighs 12 pounds.

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2—Jaeger-Lakewood Model H Cement Finishers—$5,000.00 Each.
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2—Jaeger Concrete Spreaders—$6,500.00 Each.
This equipment all new, 1942, in excellent condition. Prices F.O.B. Boise, Idaho

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SPECIAL OFFERINGS

Gallon Model 401 Motor Grader, ten foot blade, scarifier, gasoline engine. Rebuilt $2.700.00

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2 D-8's 8R & 1H series w/dozers
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1 Caterpillar model #12 Grader
Truck Crane, Quickway mod. E
2 Diesel Rollers, Gallon & Huber 10 ton
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3 International T-9 Swing Cranes
Tractor, TD-14 w/Hughes-Keenan Crane
Asphalt Distributor, 800 gal.
Cement Mixer, 2 bag, on rubber tires
2 TD-18's, 1 TD14 w/blades

Also other items.

All very clean, some new
For details and pictures:

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WANTED
Used
Crusher Feeder

3' x 12' minimum with overlapping links.

W-8938, Engineering News Record
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1½ Yd Steam Powered Crane
Bucyrus Erie Model 41-B or similar
Wood and Steel Deck Scows 30 x 80 or larger.

"STONE THE CRANE MAN"
306 ARCHITECTS BUILDING
415 Brainard Ave. Detroit 1, Mich.
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WANTED
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Ten Cylinder 8¼ x 10 O. P. Diesel Engine. Model 38D.

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Backhoe Attachment for Osgood, Model 200. Concrete Finishing Machines and Longitudinal Finisher—late model. Advise condition, location, and price.

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14 Fords and Brockways with winches and derricks, all equipped. Were used by New England Tel and Tel Co. Suitable for contractors. $500.00 each.

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Two Chain Drive 1942 Sterling Model 144. Four Macks Model FG Chain Drive, 5 yard bodies. These trucks have been through our shop and are ready for work. Price from $2000.00 to $3000.00

Bulldozer Allis-Chalmers, Model HD14 used about 2000 hours. Make Offer.

¾ Yard Shovel. Buyers with Backhoe attachment. Model 85, extra good. Shows no wear. Make Offer.

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Sterling 10 Wheel Dual Drive HB600 Cummins Diesel, Motor Cable Winch, Low Mileage.

1946 Sterling Model 115, with HB600 Cummins Diesel. $3500.00

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MYSTIC- 6-7346

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1—10 Ton Truck Crane
1—25 Ton Truck Crane
A-1 Condition
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FOR SALE
Lorain Crane

Cat D-11000 Engine Model 57-75, 40 foot boom, completely rebuilt. Sacrifice at $10,000.

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Telephone 740.

FOR SALE

Koehring 27E2-A Paver Serial No. 16412—27' 6" Boom. Ord—12' Finishing Machine No. 829 including tossing wheels.
Both machines good condition—Location Hicksville, L. I., N. Y.

HARRIS GRAND
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PResident 4-6793

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1—Model 6 Northwest
Dual Crowd Shovel Attachment

Consisting of a 25 ft. boom, 18 ft. dipper sticks—1½ yd. Manganese front dipper complete with cables and lagging. Used 4 months.

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One model 200 Osgood

Serial 4879 with backhoe attachment 45' boom, ½ yard Hendrix perforated drag bucket and fair leads. Complete overhaul in December. Now working in Western Kansas.

Our price is $8500. fob Goodland, Kansas
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60 ton—2½ cu. yd. capacity Combination cranes, dragline and clamshells, caterpillar mounted—diesel powered. Reply

FR-8967, Engineering News Record
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1—P&H Model 255A, Ser. No. 7005, with 80' main boom and 30' jib, mounted on a 6 cyl. Mack, 10 wheels, pneumatic tires, air brakes and outriggers $11,750.00

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Back-Hoe attachment from 1948 22-B or will trade for Shovel attachment.

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Serial number 14958, equipped with Crane and Dragline. Dual-Control and Dual-Drive. Good Condition.

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1—¾ yd. Marion combination shovel, dragline and clamshell outfit in A-1 condition, equipped with new GM Diesel engine—never been used. Available now $13,500.00

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FS-7325, Engineering News-Record
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Jaeger Concrete Spreader—10-13' ... $3,500
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C.H.&E. Triplex Road Pump..... $500
Buckeye Formgrader—10-14' $3,750

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New Hughes Keenan—New Gas Tractor $6,000
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Tell us your problem — Send for new list

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1 160S Pumpcrete machine with 800 ft. 7" pipe
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3 HK500 cu. ft. I. R. Portable Compressors
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6 D-35 I. R. Drifters
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2500 Ft. Track—30" gauge
3 7½ K. W. Generators
4 1 cu yd. Orange Peel Buckets
Pipe, cars, drill steel and other miscellaneous tunnel equipment

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1—Osgood Model 800—1½ cu. yd. Combination Shovel and Crane Serial #3288 with D13000 Cat. Diesel Engine and spare parts.
1—Northwest Model 6 Crane Serial #4199 with 70 ft. boom with Twin City Gasoline Engine.
1—Bucyrus-Erie Model D2—1 cu. yd. Diesel Crane Serial #5092 with 45 ft. Boom, dragline attachment and shovel front.
1—Erie Model B2 Steam Crane, 40 ft. Boom, 45 H.P. Boiler Serial #10041 (Ideal for pile driver).
1—Model 200D—8" Pumpcrete Electric with Pugmill Remixer.
1—Model 200D—8" Pumpcrete Electric with Rotary Remixer.
900 ft.—8" Pumpcrete Pipe with Bends.
100—Buckets all Types and Sizes.
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100 KW. Diesel Engine Generator Sets

11—100 KW., 250/275 V. D.C. Delco Generators dir. con. to 150 HP. Model GBD-8, 5½x7, 8 cyl. Superior Diesel Engines, elec. starting with muffler, power panel and accessories.
1—100 KW., same as above with 220 or 440 V., New A.C. Generators.
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3—NEW 7½ KVA. 3 ph. 60 cy. 1800 rpm. Wisconsin Gas Engines.
4—NEW 5 KVA. 1 ph. 60 cy. Wisconsin Engine Sets.

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Adjustable 18' to 25', Late Model, condition like new, bargain.
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1- TD 9 International Bulldozer
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Buckeye Model 46, Ditcher, Twin City Gas, Excellent Condition $4,500.00
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Hanson model 31 crane capacity to 5 tons, one year old used little. An excellent buy. Guarantee 30 days.
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CONSTRUCTION BUSINESS

April housing starts gain but still lag behind '48

New housing starts totaled 86,000 in April according to preliminary estimates just released by the Bureau of Labor Statistics. This is 14 percent below the 99,500 starts in April 1948. Total units started in the first four months of this year are 224,000, 13 percent less than last year's 279,500 starts during the same period.

Dollar volume of new residential construction is estimated at $453 million for the month, 10 percent above the March volume, but 19 percent under April 1948.

Private home building at $440 million for the month was 10 percent over March, and 20 percent below April 1948. Public housing volume rose to $13,000,000—topping March by 30 percent, and April of last year by 86 percent.

Industrial and commercial construction activity declined in value in April, while most other types of non-residential building maintained about the same level as in March. The continued decline in industrial construction for the first four months of this year has placed its value about one-fifth below the level of the same period in 1948, according to government estimates. Construction of stores, restaurants and garages is lagging by 16 percent.

Export controls relaxed on some building items

Over the past six months there has been a subtle change in U. S. export control policy that will put U. S. construction material producers far more solidly into the foreign market. Controls have been relaxed on most goods now in ample supply—the exceptions being those still on the Commerce Department's positive list for reasons of security.

Various degrees of "security control" now in effect cover exports of steel and steel products, electrical and mining machinery, tinplate, aluminum, non-ferrous metals, petroleum products and lumber. Licensing requirements laid down by the Department of Commerce prescribe quotas and destinations of these and other materials.

Steel products themselves illustrate three different stages of control relaxation. Export quotas have been increased on nails and pipe fittings; quotas have been removed on certain types of wire mill products, rails, ingots, billets, bars, forgings, railway car wheels, and structural shapes; and "reject iron and steel" (including tin mill black plate and carbon steel) has been removed from the list entirely. In the first two cases licenses are still required for all exports, and in the last all European shipments must be licensed.

Still on the "positive list" are heavy gauge tubing, plate, strip and sheet, but these may be open-ended in the next two or three months.

There is no heavy electrical machinery on the list, because so many backed-up domestic orders make controls unnecessary. Insulated copper wire and cable, iron and steel conduits, and storage batteries will remain on indefinitely. Mining machinery is on the list—particularly rock drills and other tools that require industrial diamonds.

Red and white lead (dry and in oil) and litharge—have all recently been open-ended. Chrome pigments and radium paints will probably remain on the positive list.

On tinplate, aluminum, non-ferrous metals, and petroleum products, export quotas have been increased or eliminated entirely. These items are still on the Commerce Department's positive list however, which means a license is still necessary for export.

Materials production off in early months of 1949

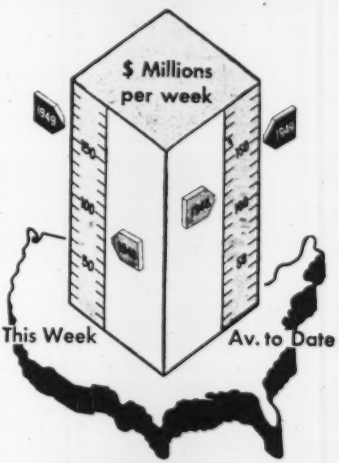
Gradual slackening of building materials production—first noticed during the second half of 1948—continued through February of this year, the Department of Commerce reported last week.

Measured by the Department's monthly composite index of production for selected construction materials, February output was down 7 percent from the revised January figure. Seasonally adjusted the drop amounted to about 3½ percent. For the first two months of this year, the overall index level was 11 percent below the corresponding 1948 period.

Of the 20 materials included in the composite index, all but three—plywood, warm air furnaces, and structural tile—declined in February. But output remained at relatively high levels by comparison with last year, for all material for which demand outruns supply. More cement, nails, concrete reinforcing bars, cast-iron soil pipe and fittings, and warm air furnaces were turned out in February of this year than same month last year.

ENR INDEX NUMBERS

Index Base = 100		1913	1926
Construction Cost	May '49	472.10	226.94
Building Cost	May '49	348.92	188.62
Volume	Apr. '49	268	118



Activity This Week

As reported to ENR (in millions of dollars)

Amount of Contracts let

Week of May 19 1949	This Week	Cumulative 1949 (20 wks.)	Cumulative 1948 (21 wks.)	% chge av.wk.
Federal	$15.0	$408.8	$449.2	—4
State & Mun.	83.7	1,081.4	903.9	+26
Total Public	$98.7	$1,490.2	$1,353.1	+16
Total Private	59.0	1,389.9	1,194.0	+22
U. S. Total	$157.7	$2,880.1	$2,547.1	+19

Contracts by type of work

	This Week	Cumulative 1949 (20 wks.)	Cumulative 1948 (21 wks.)	% chge av.wk.
Waterworks	$1.7	$61.4	$66.5	—3
Sewerage	8.3	94.0	83.8	+18
Bridges	11.3	130.0	110.0	+24
Highways	25.7	266.6	358.1	—22
Earthwork, Waterways	10.9	239.0	230.2	+9
Buildings, Public	34.6	603.1	417.9	+52
Industrial	26.3	384.8	374.3	+8
Commercial	31.8	883.1	728.0	+27
Unclassified	13.1	218.1	178.3	+28

NOTE: Minimum size projects included are: Waterworks and waterway projects, $28,000; other public works, $50,000; industrial buildings, $68,000; other buildings, $250,000.

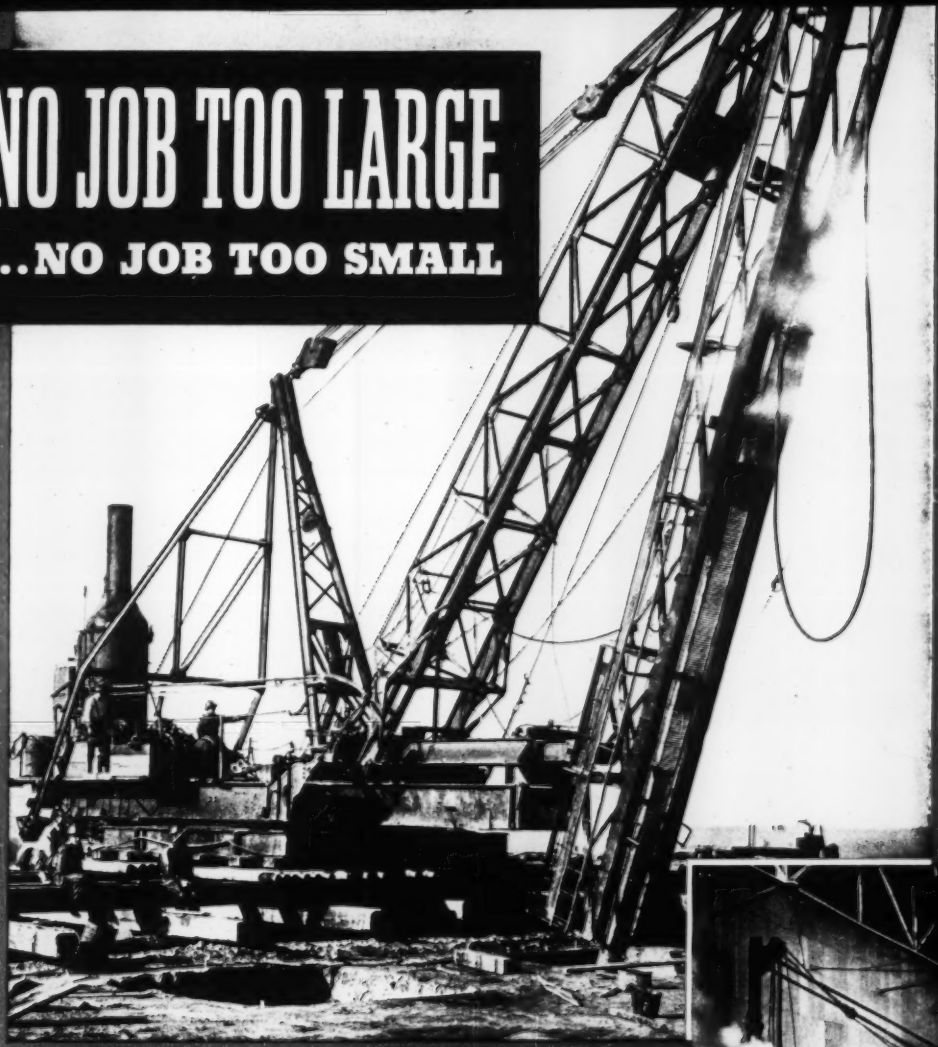
New capital for construction

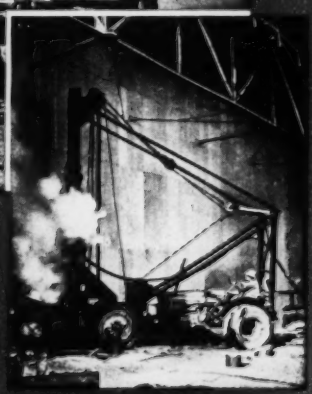
	Cumulative 1949 (20 wks.)*	Cumulative 1948 (21 wks.)	% chge av.wk.
NON-FEDERAL	$2,098.3	$1,457.3	+51
Corporate Securities	1,044.3	796.8	+38
State and Municipal	1,054.2	660.5	+88
Total Capital	$2,098.5	$1,457.3	+51

* Revised

NO JOB TOO LARGE

...NO JOB TOO SMALL





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"FORD F-8 Big Jobs outperform all other trucks in their class!"

Roadside Report

FORD TRUCKS

JAMES L. DIGGS
KINGMAN
ARIZONA

"MY BONUS BUILT Ford F-8 Big Jobs, averaging 46,000 lbs. gross, are outperforming all other trucks in their class," reports Mr. James L. Diggs. "Gas mileage is 6 miles per gallon. The engine on one F-8 has never felt a wrench, except for changing one set of points and two fan belts. My run takes us over a mountain range and through the intense heat of the Colorado River Valley."

Mr. Diggs is one of many big-time haulers who give the Ford Big Jobs a great big hand. Owners report the 145-horsepower engine outperforms anything in its class. They offer plenty of proof that it outsaves many engines much smaller in size. Drivers report that the new Ford Million Dollar Cab can't be beat for comfort. Ford Big Jobs for '49 are Bonus Built . . . like the other 139-plus models in the full line of Ford Trucks. Bonus Built is the superstrong construction that contributes to long truck life. Life insurance experts prove Ford Trucks last longer.

FORD 1949 Bonus Built TRUCKS 1949

BUILT STRONGER TO LAST LONGER

USING LATEST REGISTRATION DATA ON 5,444,000 TRUCKS, LIFE INSURANCE EXPERTS PROVE FORD TRUCKS LAST LONGER!

ONLY THE FORD BIG JOB HAS ALL THESE FEATURES!

- ★ New 145-h.p. Ford V-8 engine for top performance.
- ★ Ford exclusive concentric dual-throat carburetor for more power, more economy.
- ★ New heavy duty 5-speed transmissions for operating flexibility.
- ★ Big Ford power-operated brakes for sure-footed stopping; rear 16-inch by 5-inch on the F-8.
- ★ Ford Super Quadrax 2-speed axle with vacuum shift for performance flexibility in Model F-8 (single speed axle also available); single-speed Quadrax Hypoid Axle in Model F-7.
- ★ Large diameter (10-inch) wheel bolt circle with 8 studs to allow for extra-strong hub construction.
- ★ Million Dollar Cab with Ford Exclusive Level Action suspension for greater driving comfort.
- ★ Nationwide service from over 6,400 Ford Dealers.
- ★ Ford Bonus Built construction for long truck life.

Gross Vehicle Weight Ratings: F-8 up to 21,500 lbs., F-7 up to 19,000 lbs. Gross combination ratings: F-8 up to 39,000 lbs., F-7 up to 35,000 lbs.